Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1171084

Form ACO-1
August 2013
**Form must be Typed**
**Form must be Signed**
**All blanks must be Filled**

# WELL COMPLETION FORM
## WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34758
Name: WPX Energy Production, LLC
Address 1: ONE WILLIAMS CENTER
Address 2: PO BOX 3102
City: TULSA State: OK Zip: 74101 + _ _ _ _
Contact Person: HEATHER RILEY
Phone: ( 505 ) 333-1822
CONTRACTOR: License # 5929
Name: Duke Drilling Co., Inc.
Wellsite Geologist: TIM BRANDON
Purchaser: JP Energy

Designate Type of Completion:

☑ New Well ☐ Re-Entry ☐ Workover

☑ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

08/03/2013 Spud Date or Recompletion Date
08/30/2013 Date Reached TD
11/25/2013 Completion Date or Recompletion Date

API No. 15 - 15-151-22415-01-00
Spot Description:
NW SE NE NE Sec. 21 Twp. 26 S. R. 12 ☐ East ☑ West
920 Feet from ☑ North / ☐ South Line of Section
550 Feet from ☑ East / ☐ West Line of Section

Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW

GPS Location: Lat: *(e.g. xx.xxxxx)* , Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Pratt
Lease Name: Schepmann Well #: 1-21H
Field Name: WILDCAT
Producing Formation: MISSISSIPPI LIME
Elevation: Ground: 1906 Kelly Bushing: 10
Total Vertical Depth: 9600 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 986 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

**Drilling Fluid Management Plan**
*(Data must be collected from the Reserve Pit)*

Chloride content: 0 ppm Fluid volume: 0 bbls
Dewatering method used: Hauled to Disposal

Location of fluid disposal if hauled offsite:

Operator Name: Siroky Oil Management
Lease Name: Siroky #2 License #: 34484
Quarter NE Sec. 20 Twp. 27 S. R. 12 ☐ East ☑ West
County: Pratt Permit #: 1044197911

**AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

**KCC Office Use ONLY**

☑ **Confidentiality Requested**
Date: 12/02/2013
☑ **Confidential Release Date:** 12/02/2015
☑ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
**ALT** ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 12/05/2013

1171084

Operator Name: WPX Energy Production, LLC Lease Name: Schepmann Well #: 1-21H

Sec. 21 Twp. 26 S. R. 12 ☐ East ☑ West County: Pratt

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☐ Yes ☑ No
*(Attach Additional Sheets)*

Samples Sent to Geological Survey ☐ Yes ☑ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

GR-MWD

☑ Log Formation (Top), Depth and Datum ☑ Sample

| Name | Top | Datum |
|---|---|---|
| BASE HUTCHINSON SALT | 1908' | +10' |
| HEEBNER SHALE | 3540' | -1600' |
| LANSING | 3748' | -1790' |
| MISS | 4589' | -2223' |

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Attached | Attached | Attached | Attached | Attached | Attached | Attached | Attached |
| | | | | | | | |
| | | | | | | | |

ADDITIONAL CEMENTING / SQUEEZE RECORD

| Purpose: | Depth Top Bottom | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|---|---|---|---|
| ___ Perforate<br>___ Protect Casing<br>___ Plug Back TD<br>___ Plug Off Zone | - | | | |
| | - | | | |

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

| Shots Per Foot | PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated | Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)* | Depth |
|---|---|---|---|
| 0 | No bridge plugs, OH packers @ 9460', 9179, 8896, 8619, 8339, 8058, 7774, 7492, 7216, 6938, 6655, 6377, 6097, 5818, 5538, 5 | Fracture stimulated with 16 stages using 1.4 MM gallons of crosslinked get, 270M gallons of linear gel, 16M g | 5418 - 9514 |
| | | | |
| | | | |
| | | | |
| | | | |

| TUBING RECORD: | Size: | Set At: | Packer At: | Liner Run: |
|---|---|---|---|---|
| | 2 7/8", 6.5#/ft | 4135 | 4138 | ☑ Yes ☐ No |

Date of First, Resumed Production, SWD or ENHR.

Producing Method: ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

| Estimated Production Per 24 Hours | Oil Bbls. | Gas Mcf | Water Bbls. | Gas-Oil Ratio | Gravity |
|---|---|---|---|---|---|
| | | | | | |

DISPOSITION OF GAS:
☐ Vented ☑ Sold ☐ Used on Lease
*(If vented, Submit ACO-18.)*

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☑ Other *(Specify)* OH Packers & Sleeves

PRODUCTION INTERVAL:
5418
9514

**Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202**

| | |
|---|---|
| Form | ACO1 - Well Completion |
| Operator | WPX Energy Production, LLC |
| Well Name | Schepmann 1-21H |
| Doc ID | 1171084 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|---|---|---|---|---|---|---|---|
| Conductor | 17.5 | 13.3750 | 54.5 | 120 | Class A 15.6 | 150 | 2% CaCl 1/2# sx Cellflake |
| Surface | 12.25 | 9.6250 | 36 | 986 | Class A/35% Pozmix 15.6# | 425 | 6% gel 3% CaCl 1/2#/sx Cellflake |
| Intermediate | 8.75 | 7 | 26 | 4737 | Class A type I/II 12.6 # 15# | 565 | 2% Sod Silicate 2% Gypsum 2% CaCl 1/4# Cellflake |
| Production | 6.125 | 4.5 | 11.6 | 9600 | | 0 | |

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

December 02, 2013

HEATHER RILEY
WPX Energy Production, LLC
ONE WILLIAMS CENTER
PO BOX 3102
TULSA, OK 74101

Re: ACO1
API 15-151-22415-01-00
Schepmann 1-21H
NE/4 Sec.21-26S-12W
Pratt County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
HEATHER RILEY

## Cementing Job Log

Customer: WPX Energy, Inc.
Well Name: Schepmann #1-21H
City: Iuka
State: Kansas
Contractor & rig#: Duke #20
Well Type: New development well
Sales person: Kevin Gordley
Pump truck#: 77686-19905

Customer Rep: Jimmy
API#:
County: Pratt
Legal Description: 21-26S-13W
Job Purpos Cement 7" Intermediate
Job Type: Cement 7" Intermediate
Cement Supervisor: Clarence Messick
Ticket #: 1718-08810 A

| Activity: | Date/Time | Rate | Volume | Psi | Comments: |
|---|---|---|---|---|---|
| | | BPM | bbl | Psi | |
| On location | 8/14/2013 | | | | Time on location |
| | 2:30 PM | | | | |
| Safety meeting | 8/14/2013 | | | | |
| | 2:45 PM | | | | |
| Rig up | 8/14/2013 | | | | |
| | 3:00 PM | | | | |
| PSI test | 8/14/2013 | | | 3000 | Test pump & line- 3000 psi |
| | 4:30 PM | | | | |
| Pump spacer | 8/14/2013 | 5 | 12 | 400 | Pump 12 bbl Mudflush |
| | 4:34 PM | 5 | 5 | 400 | Pump 5 bbl h2o spacer |
| Pump cement | 8/14/2013 | 6 | 32 | 400 | Pump 85 sk A-con cement |
| | 4:40 PM | 6 | 122 | 300 | Pump 480 sk AA2 cement |
| Drop plug | 8/14/2013 | 0 | 0 | 0 | |
| | 5:05 PM | | | | |
| Start displacement | 8/14/2013 | 6.5 | 0 | 0 | H2o displacement |
| | 5:10 PM | 5 | 65 | 500 | Start lift cement |
| Plug down | 8/14/2013 | 3 | 180.2 | 2500 | Plug down |
| | 5:52 PM | | | | |
| Comments | 8/14/2013 | Release psi- Float held | | | |
| | 6:00 PM | Good circulation thruought job | | | |

## Cement Job Summary

| | | | |
|---|---|---|---|
| Customer: | WPX Energy, Inc. | Customer Rep: | Jimmy |
| Well Name | Schepmann 1-21H | API#: | |
| City: | Iuka | County: | Pratt |
| State: | Kansas | Legal description: | 21-26S-12W |
| Contractor | Duke #21 | Job Type: | Cement 7" Intermediate |
| Well type: | New development | Sales person: | Kevin Gordley |
| Cement supervisor: | Clarence Messick | Pump truck #: | 77686-19905 |

### Job Personnel & Equipment

Clarence Messick in pickup #37216
Mike Mcgraw in pump truck #77686-19905
Jesse Pierson in bulk truck #19831-19862
Dale Phye in bulk truck #19826-19860

### Well Data:

8 3/4" open hole to 4738'
7" 26# casing to 4737'
9 5/8" 36# casing to 985'

### Float equipment ticket #1718-08811 A

1- 7" Top rubber plug
1- 7" Sure seal float shoe
1- 7" Sure seal float collar
29- 7"x 8 1/2" Bow spring centralizer
2- 7" Baskets
10- 7" Beveled stop rings
4- 7" x 8 1/4" Solid body straight centralizer
1- Threadlock kit

### Cement Data:

85 sacks A-Con cement- Class A regular or Type I/II
2% Gypsum- cal seal w60 powder 50 lb
2% Calcium Chloride- Pellets 80 lb.
1/4 #/sk Cellflake- 3/8" Flakes
2% Metsolite- sodium metasilicate 50 lb
Fresh H2o
Density- 12.6 lb/gal, 2.11 cft/sk, 11.84 gallon h2o/sk
480 sacks AA2 cement- Class A regular or Type I/II
1/4 #/sk Cellflake- 3/8" Flakes
.25% Defoamer- powder 50 lb
10% Salt- fine 50 lb
.5% CFR- powder 55 lb
5% Gypsum- cal seal w60 powder 50 lb
.3% FLA-322- powder 55 lb
.1% Wca-1- powder 50 lb
5 #/sk Gilsonite- granular 50 lb
Density- 15.0 lb/gal, 1.43 cft/sk, 6.0 gallon h2o/sk

### PSI/VOLUMES/RATES

565 sacks cement volume of 154 bbl.
Displacement of 4706' of 7" 26# casing is 180.2 bbl.
Differential psi at 4706' is 1222.1 psi
Average pump rate thru job is 5 BPM.

## Cementing Job Log

Customer: WPX Energy, Inc.
Well Name: Schepmann #1-21H
City: Iuka
State: Kansas
Contractor & rig#: Duke #20
Well Type: New development well
Sales person: Kevin Gordley
Pump truck#: 27463

Customer Rep: Jimmy
API#:
County: Pratt
Legal Description: 21-26S-13W
Job Purpos Cement 13 13 3/8 conductor
Job Type: ( Cement 13 3/8 conductor
Cement Supervisor: K( Mike Mattal
Ticket #: 1718-08754 A

| Activity: | Date/Time | Rate | Volume | Psi | Comments: |
|---|---|---|---|---|---|
| | | BPM | bbl | | |
| On location | 8/3/2013 | | | | Time on location |
| | 7:10 PM | | | | |
| Safety meeting | 8/3/2013 | | | | |
| | 7:30 PM | | | | |
| Rig up | 8/3/2013 | | | | |
| | 8:00 PM | | | | |
| PSI test | 8/3/2013 | | | 1000 | Test pump & line to 1000psi |
| | 9:00 PM | | | | |
| Pump spacer | 8/3/2013 | 5 | 3 | 200 | Pump 3 bbl h2o to break |
| | 9:15 PM | | | | circulation, then start mix |
| Pump cement | 8/3/2013 | 5 | 32 | 200 | cement. |
| | 9:16PM | | | | |
| Drop plug | 8/3/2013 | 0 | 0 | 0 | No plug |
| | | | | | |
| Start displacement | 8/3/2013 | 5 | 0 | 200 | |
| | 9:25PM | | | | |
| Finish displaceent | 8/3/2013 | 2 | 16 | 100 | |
| | 9:30PM | | | | |
| Comments | 8/3/2013 | Shut in swedge & valve with 100 psi. | | | |
| | 9:31PM | | | | |

Circulate 16 bbl cement to pit.

Cement Job Summary

| | | | |
|---|---|---|---|
| Customer: | WPX Energy, Inc. | Customer Rep: | Jimmy |
| Well Name | Schepmann 1-21H | API#: | |
| City: | Iuka | County: | Pratt |
| State: | Kansas | Legal description: | 21-26S-12W |
| Contractor | Duke #21 | Job Type: | Cement 13 3/8 conductor |
| Well type: | New development | Sales person: | Kevin Gordley |
| Cement supervisor: | Mike Mattal | Pump truck #: | 27463 |

Job Personnel & Equipment

Mike Mattal in pickup #37216
Steve Young in pump truck #27463
Jesse Pierson in bulk truck #19960-21010

Well Data:

17 1/2" open hole to 126'
13 3/8" 54.5# conductor casing to 122'

Float Equipment Ticket # 1718-07350 A

4- 13 3/8" x 17 1/2" bow spring centralizers
2- 13 3/8" cement baskets
2- 13 3/8" stop ring

Cement Data:

150 sacks Common cement class 'A' with 2% calcium chloride, 1/2 #/sk cellflake mixed at 15.6 ppg, 1.20 cft/sk, 5.21 gallon h2o/sk.

PSI/VOLUMES/RATES

150 sacks cement volume of 32 bbl.
Displacement to 107' of 13 3/8" 54.5# casing is 16.5 bbl.
Differential psi at 107' is 40.4 psi.
Average pump rate thru job is 5 BPM.

## Cementing Job Log

Customer: WPX Energy, Inc.
Well Name: Schepmann #1-21H
City: Iuka
State: Kansas
Contractor & rig#: Duke #20
Well Type: New development well
Sales person: Kevin Gordley
Pump truck#: 19889-19843

Customer Rep: Jimmy
API#:
County: Pratt
Legal Description: 21-26S-13W
Job Purpos Cement 9 5/8 surface
Job Type: ( Cement 9 5/8 surface
Cement Supervisor: K( Keven Lesley
Ticket #: 1718-08574 A

| Activity: | Date/Time | Rate | Volume | Psi | Comments: |
|---|---|---|---|---|---|
| | | BPM | bbl | Psi | |
| On location | 8/5/2013 | | | | Time on location |
| | 9:00 AM | | | | |
| Safety meeting | 8/5/2013 | | | | |
| | 9:15 AM | | | | |
| Rig up | 8/5/2013 | | | | |
| | 10:00 AM | | | | |
| PSI test | 8/5/2013 | | | 2000 | Test pump & line- 2000# |
| | 4:30 PM | | | | |
| Pump spacer | 8/5/2013 | 6 | 3 | 300 | Pump 3 bbl h2o to break |
| | 4:49 PM | | | | circulation, then start mix |
| Pump cement | 8/5/2013 | 6 | 74 | 300 | cement. 250 sk A Serv Lite, |
| | 4:50 PM | | 38 | 200 | 175 sk Common. |
| Drop plug | 8/5/2013 | 0 | 0 | 0 | |
| | 4:58 PM | | | | |
| Start displacement | 8/5/2013 | 6 | 0 | o | H2o displacement |
| | 5:00 M | | | | |
| Plug down | 8/5/2013 | 2 | 72.9 | 1000 | Plug down |
| | 5:30 PM | | | | |
| Comments | 8/5/2013 | Release psi- Float held | | | |
| | 5:31 PM | | | | |

Circulate 30 bbl cement to pit.

## Cement Job Summary

| | | | |
|---|---|---|---|
| Customer: | WPX Energy, Inc. | Customer Rep: | Jimmy |
| Well Name | Schepmann 1-21H | API#: | |
| City: | Iuka | County: | Pratt |
| State: | Kansas | Legal description: | 21-26S-12W |
| Contractor | Duke #21 | Job Type: | Cement 9 5/8 surface |
| Well type: | New development | Sales person: | Kevin Gordley |
| Cement supervisor: | Keven Lesley | Pump truck #: | 19889- 19843 |

### Job Personnel & Equipment

Keven Lesley in pickup 37586
Ed Marquez in pump truck 19889-19843
Jesse Pierson ion bulk truck 19831-19862
Mike Lawrence in bulk truck 19960-21010

### Well Data:

12 1/4" open hole to 994'
9 5/8" 36# casing to 985'
13 3/8" 54.5# casing to 122'

### Float Equipment Ticket # 1718-08573 A

1- 9 5/8" top rubber plug
3- 9 5/8" stop rings
4- 9 5/8" x 12 1/4" bow spring centralizers
2- 9 5/8" baskets
1- 9 5/8" float collar

### Cement Data:

250 sacks A Serv Lite cement- 65% class A regular or Type I/II/35% Pozmix
6% gel- 100 lb sack bentonite
3% Calcium Chloride- Pellets 80 lb.
1/2 #/sk Cellflake- 3/8" Flakes
Fresh H2o
Density- 13.3 lb/gal, 1.66 cft/sk, 8.39 gallon h2o/sk
175 sacks Common cement- Class A regular or TypeI/II
2% Calcium Chloride- Pellets 80 lb.
1/2 #/sk Cellflake- 3/8" Flakes
Fresh H2o
Density- 15.6 lb/gal, 1.2 cft/sk, 5.2 gallon h2o/sk

### PSI/VOLUMES/RATES

425 sacks cement volume of 111.3 bbl.
Displacement to 943' of 9 5/8" 36# casing is 72.9 bbl.
Diferential psi at 943' is 311.78 psi.
Average pump rate thru job is 6 BPM.

# WPX Energy

Project: Pratt County, KS (NAD 83)
Site: Schepmann
Well: 1-21H
Wellbore: OH
Design: Plan #3

Azimuths to Grid North
True North: 0.08°
Magnetic North: 5.06°

Magnetic Field
Strength: 52022.2snT
Dip Angle: 65.75°
Date: 8/4/2013
Model: BGGM2013

**PROJECT DETAILS: Pratt County, KS (NAD 83)**

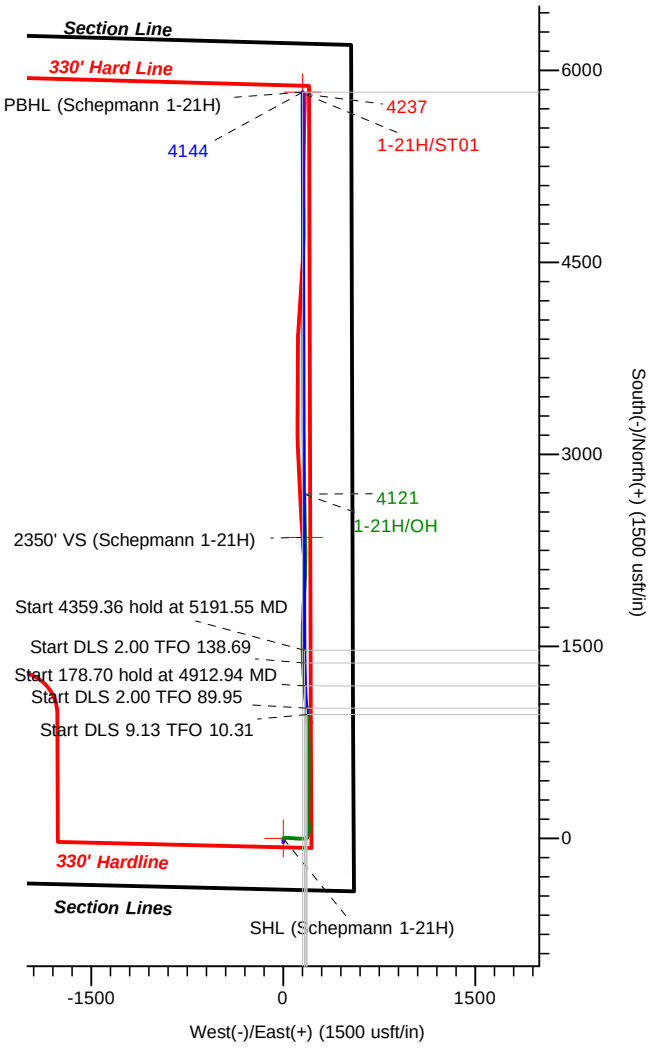
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Kansas Southern Zone

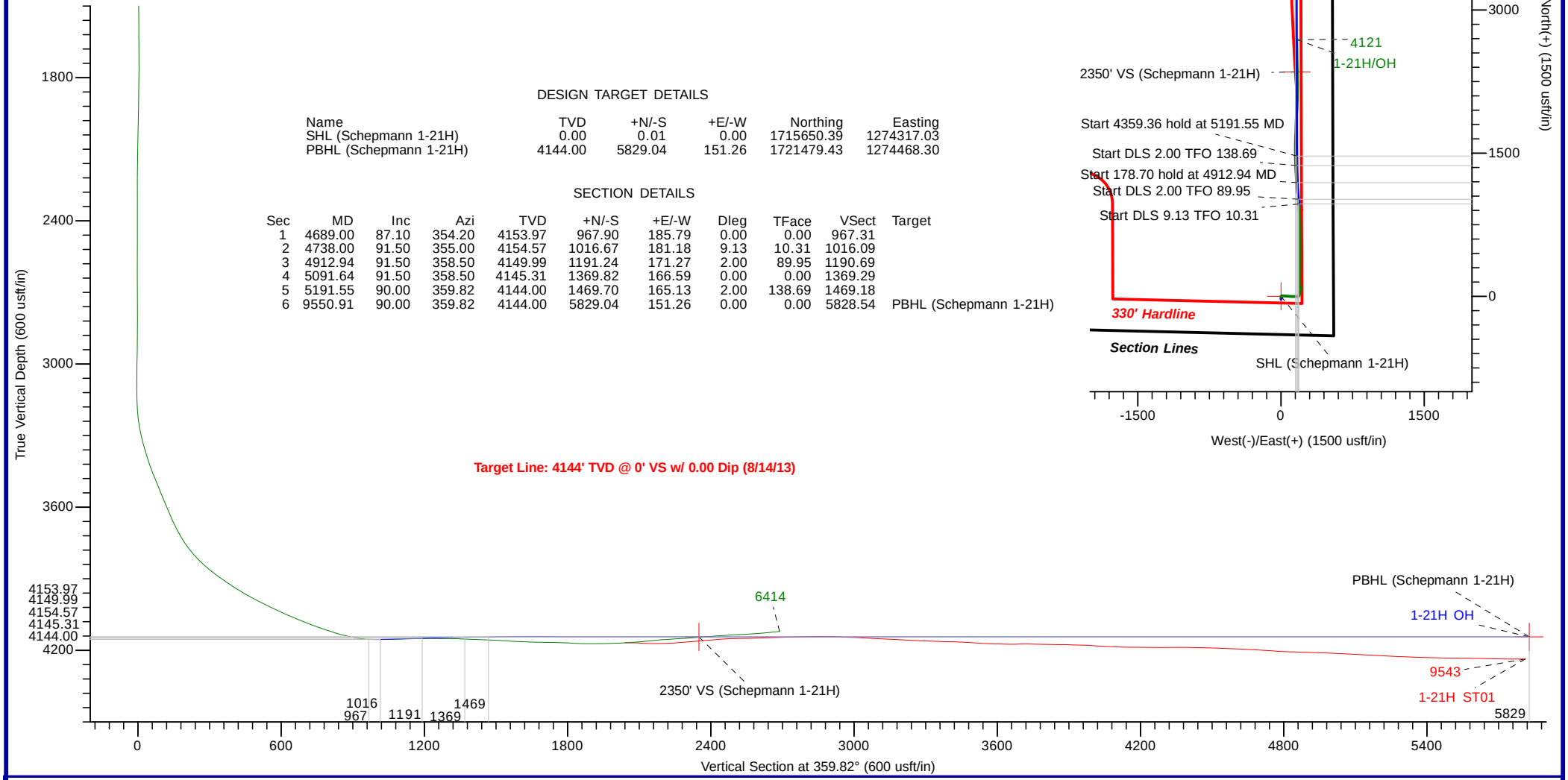
DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting |
|---|---|---|---|---|---|
| SHL (Schepmann 1-21H) | 0.00 | 0.01 | 0.00 | 1715650.39 | 1274317.03 |
| PBHL (Schepmann 1-21H) | 4144.00 | 5829.04 | 151.26 | 1721479.43 | 1274468.30 |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4689.00 | 87.10 | 354.20 | 4153.97 | 967.90 | 185.79 | 0.00 | 0.00 | 967.31 | |
| 2 | 4738.00 | 91.50 | 355.00 | 4154.57 | 1016.67 | 181.18 | 9.13 | 10.31 | 1016.09 | |
| 3 | 4912.94 | 91.50 | 358.50 | 4149.99 | 1191.24 | 171.27 | 2.00 | 89.95 | 1190.69 | |
| 4 | 5091.64 | 91.50 | 358.50 | 4145.31 | 1369.82 | 166.59 | 0.00 | 0.00 | 1369.29 | |
| 5 | 5191.55 | 90.00 | 359.82 | 4144.00 | 1469.70 | 165.13 | 2.00 | 138.69 | 1469.18 | |
| 6 | 9550.91 | 90.00 | 359.82 | 4144.00 | 5829.04 | 151.26 | 0.00 | 0.00 | 5828.54 | PBHL (Schepmann 1-21H) |





LEAM Drilling Systems LLC

**LEAM DRILLING SYSTEMS LLC**
**2010 East Davis, Conroe, Texas 77301**
**Phone: 936/756-7577, Fax: 936/756-7595**

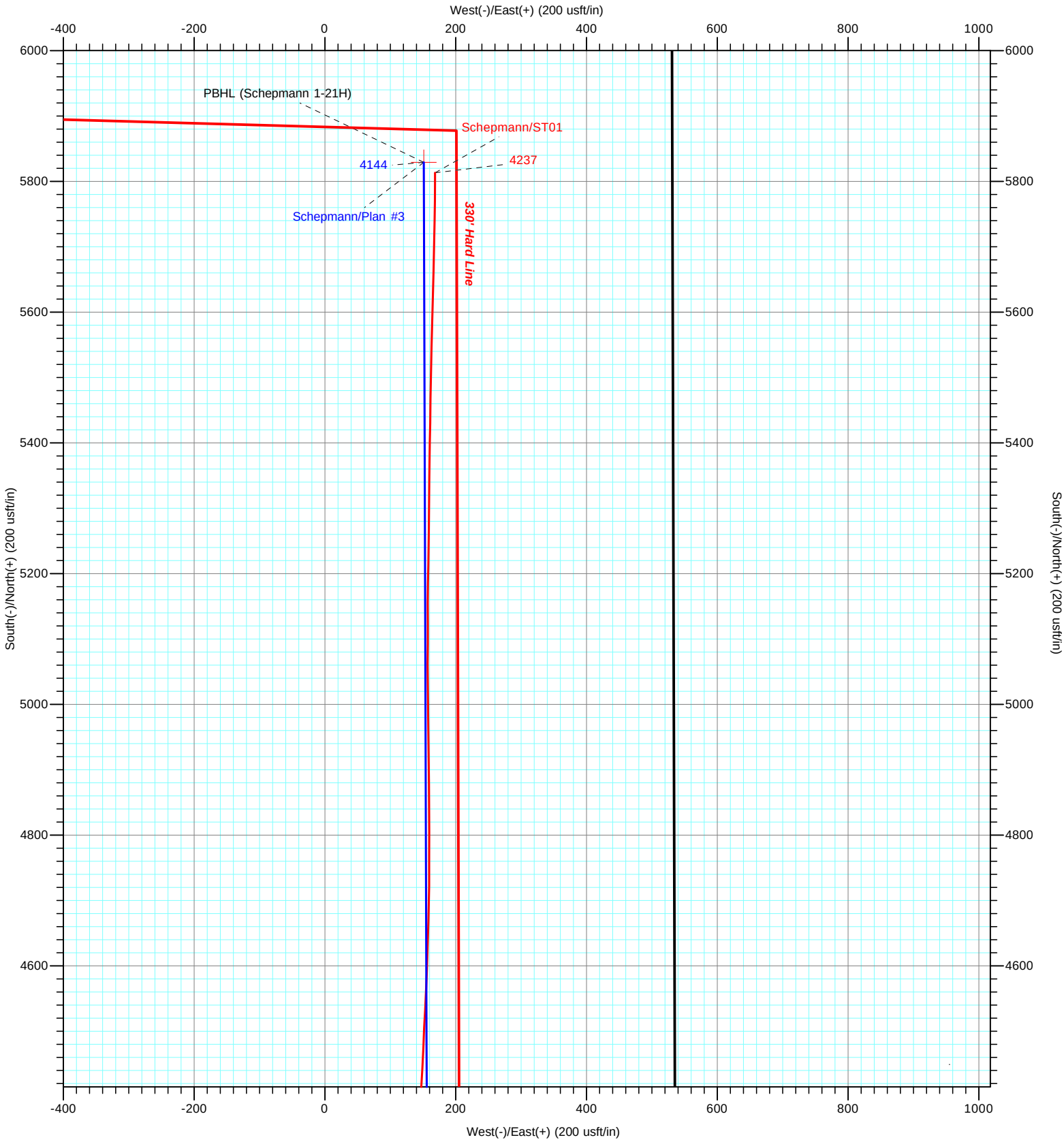

Plan: Plan #3 (1-21H/OH)
Schepmann
Created By: Shelly C. Peterkin Date: 9:17, August 31 2013
Date: _____
Approved: _____ Date: _____

# WPX Energy

Project: Pratt County, KS (NAD 83)
Site: Schepmann
Well: 1-21H
Wellbore: OH
Design: Plan #3

**Azimuths to Grid North**
**True North: 0.08°**
**Magnetic North: 5.06°**

**Magnetic Field**
**Strength: 52022.2snT**
**Dip Angle: 65.75°**
**Date: 8/4/2013**
**Model: BGGM2013**





**LEAM DRILLING SYSTEMS LLC**
**2010 East Davis, Conroe, Texas 77301**
**Phone: 936/756-7577, Fax: 936/756-7595**


Plan: Plan #3 (1-21H/OH)
Schepmann
Created By: Shelly C. Peterkin Date: 9:16, August 31 2013
Date: _____
Approved: _____ Date: _____

# LEAM Drilling Systems LLC

## Survey Report

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Project** Pratt County, KS (NAD 83)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | Kansas Southern Zone | | |

**Site** Schepmann, SHL 920' FNL & 550' FEL

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 1,715,650.39 usft | **Latitude:** | 37.774236 |
| **From:** | Lat/Long | **Easting:** | 1,274,317.03 usft | **Longitude:** | -98.631532 |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13.20 in | **Grid Convergence:** | -0.08 ° |

**Well** 1-21H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 1,715,650.38 usft | **Latitude:** | 37.774236 |
| | **+E/-W** | 0.00 usft | **Easting:** | 1,274,317.03 usft | **Longitude:** | -98.631532 |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 1,906.00 usft |

**Wellbore** ST01

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 8/24/2013 | 4.82 | 65.69 | 52,047 |

**Design** ST01

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 5,764.00 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 1.94 |

**Survey Program** **Date** 8/31/2013

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 198.00 | 5,764.00 | Survey #1 (OH) | LEAM MWD-ADJ | MWD - Standard |
| 5,794.00 | 9,543.00 | Survey #2 (ST01) | MWD-ISCWSA | MWD - Standard |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 198.00 | 0.80 | 119.00 | 197.99 | -0.67 | 1.21 | -0.63 | 0.40 | 0.40 | 0.00 |
| 290.00 | 0.70 | 114.20 | 289.99 | -1.21 | 2.28 | -1.13 | 0.13 | -0.11 | -5.22 |
| 385.00 | 0.60 | 106.50 | 384.98 | -1.59 | 3.29 | -1.48 | 0.14 | -0.11 | -8.11 |
| 479.00 | 0.20 | 59.00 | 478.98 | -1.65 | 3.90 | -1.51 | 0.52 | -0.43 | -50.53 |
| 574.00 | 0.30 | 55.00 | 573.98 | -1.42 | 4.25 | -1.27 | 0.11 | 0.11 | -4.21 |
| 667.00 | 0.40 | 52.00 | 666.97 | -1.08 | 4.70 | -0.92 | 0.11 | 0.11 | -3.23 |
| 760.00 | 0.60 | 93.30 | 759.97 | -0.91 | 5.45 | -0.72 | 0.43 | 0.22 | 44.41 |
| 852.00 | 0.40 | 114.70 | 851.97 | -1.07 | 6.22 | -0.86 | 0.29 | -0.22 | 23.26 |
| 945.00 | 1.10 | 59.40 | 944.96 | -0.75 | 7.28 | -0.50 | 1.00 | 0.75 | -59.46 |

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 1,007.00 | 0.70 | 50.60 | 1,006.95 | -0.21 | 8.09 | 0.07 | 0.68 | -0.65 | -14.19 |
| 1,100.00 | 0.60 | 54.10 | 1,099.95 | 0.44 | 8.92 | 0.74 | 0.12 | -0.11 | 3.76 |
| 1,193.00 | 0.60 | 58.80 | 1,192.94 | 0.98 | 9.73 | 1.31 | 0.05 | 0.00 | 5.05 |
| 1,286.00 | 0.70 | 52.70 | 1,285.94 | 1.57 | 10.60 | 1.93 | 0.13 | 0.11 | -6.56 |
| 1,378.00 | 0.70 | 53.80 | 1,377.93 | 2.25 | 11.50 | 2.63 | 0.01 | 0.00 | 1.20 |
| 1,471.00 | 0.70 | 53.20 | 1,470.92 | 2.92 | 12.41 | 3.34 | 0.01 | 0.00 | -0.65 |
| 1,564.00 | 1.60 | 78.50 | 1,563.90 | 3.52 | 14.14 | 4.00 | 1.09 | 0.97 | 27.20 |
| 1,657.00 | 3.60 | 82.80 | 1,656.80 | 4.15 | 18.31 | 4.76 | 2.16 | 2.15 | 4.62 |
| 1,749.00 | 6.00 | 89.80 | 1,748.47 | 4.52 | 25.98 | 5.40 | 2.68 | 2.61 | 7.61 |
| 1,842.00 | 7.80 | 95.60 | 1,840.80 | 3.93 | 37.13 | 5.18 | 2.07 | 1.94 | 6.24 |
| 1,935.00 | 7.70 | 97.70 | 1,932.95 | 2.48 | 49.58 | 4.16 | 0.32 | -0.11 | 2.26 |
| 2,027.00 | 8.00 | 97.70 | 2,024.09 | 0.79 | 62.03 | 2.89 | 0.33 | 0.33 | 0.00 |
| 2,120.00 | 8.00 | 97.30 | 2,116.18 | -0.90 | 74.87 | 1.64 | 0.06 | 0.00 | -0.43 |
| 2,213.00 | 7.40 | 92.40 | 2,208.34 | -1.97 | 87.27 | 0.99 | 0.96 | -0.65 | -5.27 |
| 2,306.00 | 7.10 | 89.10 | 2,300.60 | -2.13 | 99.00 | 1.23 | 0.55 | -0.32 | -3.55 |
| 2,399.00 | 6.90 | 89.60 | 2,392.91 | -2.00 | 110.33 | 1.74 | 0.22 | -0.22 | 0.54 |
| 2,492.00 | 7.00 | 90.70 | 2,485.22 | -2.03 | 121.59 | 2.09 | 0.18 | 0.11 | 1.18 |
| 2,585.00 | 5.90 | 89.40 | 2,577.63 | -2.05 | 132.03 | 2.43 | 1.19 | -1.18 | -1.40 |
| 2,677.00 | 5.30 | 90.00 | 2,669.19 | -2.00 | 141.01 | 2.78 | 0.66 | -0.65 | 0.65 |
| 2,770.00 | 5.70 | 85.60 | 2,761.77 | -1.65 | 149.91 | 3.44 | 0.62 | 0.43 | -4.73 |
| 2,863.00 | 7.30 | 91.90 | 2,854.17 | -1.49 | 160.42 | 3.95 | 1.88 | 1.72 | 6.77 |
| 2,955.00 | 4.70 | 102.40 | 2,945.66 | -2.49 | 169.94 | 3.27 | 3.06 | -2.83 | 11.41 |
| 3,048.00 | 2.20 | 101.00 | 3,038.48 | -3.65 | 175.42 | 2.30 | 2.69 | -2.69 | -1.51 |
| 3,084.00 | 2.10 | 97.70 | 3,074.46 | -3.87 | 176.75 | 2.12 | 0.44 | -0.28 | -9.17 |
| 3,115.00 | 2.30 | 92.80 | 3,105.43 | -3.98 | 177.94 | 2.06 | 0.89 | 0.65 | -15.81 |
| 3,146.00 | 3.20 | 77.00 | 3,136.40 | -3.81 | 179.40 | 2.27 | 3.77 | 2.90 | -50.97 |
| 3,177.00 | 4.30 | 61.00 | 3,167.33 | -3.06 | 181.26 | 3.09 | 4.87 | 3.55 | -51.61 |
| 3,208.00 | 5.90 | 43.00 | 3,198.21 | -1.33 | 183.36 | 4.89 | 7.24 | 5.16 | -58.06 |
| 3,239.00 | 8.10 | 30.70 | 3,228.98 | 1.72 | 185.56 | 8.01 | 8.55 | 7.10 | -39.68 |
| 3,270.00 | 10.60 | 24.90 | 3,259.56 | 6.18 | 187.88 | 12.55 | 8.61 | 8.06 | -18.71 |
| 3,301.00 | 13.00 | 22.10 | 3,289.91 | 12.00 | 190.39 | 18.45 | 7.96 | 7.74 | -9.03 |
| 3,332.00 | 14.90 | 17.50 | 3,319.99 | 19.03 | 192.90 | 25.56 | 7.09 | 6.13 | -14.84 |
| 3,363.00 | 16.10 | 12.40 | 3,349.87 | 27.03 | 195.03 | 33.63 | 5.85 | 3.87 | -16.45 |
| 3,394.00 | 17.20 | 8.90 | 3,379.57 | 35.76 | 196.66 | 42.41 | 4.80 | 3.55 | -11.29 |
| 3,424.00 | 18.80 | 7.70 | 3,408.10 | 44.93 | 197.99 | 51.62 | 5.47 | 5.33 | -4.00 |
| 3,455.00 | 20.30 | 7.30 | 3,437.31 | 55.22 | 199.34 | 61.94 | 4.86 | 4.84 | -1.29 |
| 3,486.00 | 21.80 | 5.20 | 3,466.24 | 66.28 | 200.55 | 73.05 | 5.42 | 4.84 | -6.77 |
| 3,517.00 | 23.00 | 1.20 | 3,494.90 | 78.07 | 201.20 | 84.85 | 6.26 | 3.87 | -12.90 |
| 3,548.00 | 22.80 | 356.40 | 3,523.46 | 90.12 | 200.95 | 96.89 | 6.06 | -0.65 | -15.48 |
| 3,579.00 | 22.00 | 353.10 | 3,552.12 | 101.88 | 199.87 | 108.60 | 4.81 | -2.58 | -10.65 |
| 3,610.00 | 22.20 | 354.00 | 3,580.85 | 113.47 | 198.56 | 120.14 | 1.27 | 0.65 | 2.90 |
| 3,641.00 | 22.70 | 355.40 | 3,609.50 | 125.26 | 197.47 | 131.88 | 2.36 | 1.61 | 4.52 |
| 3,672.00 | 23.70 | 356.60 | 3,637.99 | 137.44 | 196.62 | 144.03 | 3.57 | 3.23 | 3.87 |

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 3,703.00 | 25.00 | 357.10 | 3,666.23 | 150.20 | 195.92 | 156.76 | 4.25 | 4.19 | 1.61 |
| 3,734.00 | 27.40 | 358.40 | 3,694.04 | 163.88 | 195.39 | 170.41 | 7.96 | 7.74 | 4.19 |
| 3,764.00 | 30.20 | 360.00 | 3,720.33 | 178.33 | 195.20 | 184.84 | 9.68 | 9.33 | 5.33 |
| 3,795.00 | 33.50 | 0.70 | 3,746.66 | 194.68 | 195.30 | 201.19 | 10.71 | 10.65 | 2.26 |
| 3,826.00 | 36.80 | 0.80 | 3,772.00 | 212.52 | 195.54 | 219.03 | 10.65 | 10.65 | 0.32 |
| 3,856.00 | 40.50 | 1.00 | 3,795.43 | 231.26 | 195.83 | 237.76 | 12.34 | 12.33 | 0.67 |
| 3,886.00 | 44.60 | 1.20 | 3,817.53 | 251.53 | 196.22 | 258.04 | 13.67 | 13.67 | 0.67 |
| 3,917.00 | 48.40 | 1.20 | 3,838.86 | 274.01 | 196.69 | 280.52 | 12.26 | 12.26 | 0.00 |
| 3,948.00 | 50.80 | 0.80 | 3,858.95 | 297.61 | 197.10 | 304.13 | 7.80 | 7.74 | -1.29 |
| 3,981.00 | 52.50 | 1.00 | 3,879.43 | 323.49 | 197.51 | 330.00 | 5.17 | 5.15 | 0.61 |
| 4,012.00 | 54.00 | 1.20 | 3,897.97 | 348.32 | 197.99 | 354.84 | 4.87 | 4.84 | 0.65 |
| 4,042.00 | 55.20 | 0.80 | 3,915.35 | 372.77 | 198.41 | 379.29 | 4.15 | 4.00 | -1.33 |
| 4,073.00 | 57.20 | 0.30 | 3,932.60 | 398.53 | 198.66 | 405.04 | 6.59 | 6.45 | -1.61 |
| 4,104.00 | 58.50 | 0.10 | 3,949.09 | 424.78 | 198.75 | 431.27 | 4.23 | 4.19 | -0.65 |
| 4,135.00 | 59.90 | 360.00 | 3,964.96 | 451.40 | 198.77 | 457.88 | 4.52 | 4.52 | -0.32 |
| 4,166.00 | 61.60 | 360.00 | 3,980.11 | 478.45 | 198.77 | 484.92 | 5.48 | 5.48 | 0.00 |
| 4,197.00 | 62.60 | 360.00 | 3,994.62 | 505.85 | 198.77 | 512.30 | 3.23 | 3.23 | 0.00 |
| 4,228.00 | 63.80 | 360.00 | 4,008.59 | 533.52 | 198.77 | 539.95 | 3.87 | 3.87 | 0.00 |
| 4,259.00 | 65.30 | 359.80 | 4,021.91 | 561.51 | 198.73 | 567.92 | 4.87 | 4.84 | -0.65 |
| 4,290.00 | 65.80 | 359.40 | 4,034.75 | 589.73 | 198.53 | 596.12 | 2.00 | 1.61 | -1.29 |
| 4,321.00 | 66.30 | 359.40 | 4,047.33 | 618.06 | 198.23 | 624.42 | 1.61 | 1.61 | 0.00 |
| 4,352.00 | 66.70 | 359.60 | 4,059.69 | 646.48 | 197.98 | 652.83 | 1.42 | 1.29 | 0.65 |
| 4,383.00 | 67.40 | 359.80 | 4,071.78 | 675.03 | 197.83 | 681.35 | 2.33 | 2.26 | 0.65 |
| 4,414.00 | 67.80 | 359.60 | 4,083.59 | 703.69 | 197.68 | 709.99 | 1.42 | 1.29 | -0.65 |
| 4,445.00 | 68.70 | 359.40 | 4,095.08 | 732.48 | 197.43 | 738.75 | 2.96 | 2.90 | -0.65 |
| 4,473.00 | 70.30 | 359.40 | 4,104.88 | 758.71 | 197.16 | 764.95 | 5.71 | 5.71 | 0.00 |
| 4,504.00 | 72.10 | 358.70 | 4,114.87 | 788.05 | 196.67 | 794.26 | 6.19 | 5.81 | -2.26 |
| 4,535.00 | 73.00 | 358.40 | 4,124.17 | 817.61 | 195.92 | 823.78 | 3.05 | 2.90 | -0.97 |
| 4,565.00 | 74.20 | 357.70 | 4,132.64 | 846.37 | 194.94 | 852.50 | 4.58 | 4.00 | -2.33 |
| 4,596.00 | 77.00 | 356.60 | 4,140.35 | 876.36 | 193.45 | 882.41 | 9.66 | 9.03 | -3.55 |
| 4,627.00 | 79.50 | 355.60 | 4,146.66 | 906.63 | 191.38 | 912.60 | 8.66 | 8.06 | -3.23 |
| 4,658.00 | 83.00 | 354.50 | 4,151.38 | 937.15 | 188.74 | 943.02 | 11.82 | 11.29 | -3.55 |
| 4,689.00 | 87.10 | 354.20 | 4,154.05 | 967.88 | 185.70 | 973.62 | 13.26 | 13.23 | -0.97 |
| 4,775.00 | 91.85 | 354.80 | 4,154.84 | 1,053.46 | 177.46 | 1,058.87 | 5.57 | 5.52 | 0.70 |
| 4,806.00 | 92.30 | 354.30 | 4,153.72 | 1,084.30 | 174.52 | 1,089.59 | 2.17 | 1.45 | -1.61 |
| 4,837.00 | 92.90 | 354.60 | 4,152.31 | 1,115.12 | 171.52 | 1,120.29 | 2.16 | 1.94 | 0.97 |
| 4,868.00 | 91.89 | 354.51 | 4,151.01 | 1,145.95 | 168.58 | 1,151.01 | 3.27 | -3.26 | -0.29 |
| 4,899.00 | 89.69 | 356.01 | 4,150.59 | 1,176.84 | 166.02 | 1,181.79 | 8.59 | -7.10 | 4.84 |
| 4,930.00 | 89.25 | 355.66 | 4,150.87 | 1,207.76 | 163.77 | 1,212.62 | 1.81 | -1.42 | -1.13 |
| 4,961.00 | 90.31 | 355.92 | 4,150.99 | 1,238.67 | 161.49 | 1,243.44 | 3.52 | 3.42 | 0.84 |
| 4,991.00 | 90.97 | 356.29 | 4,150.66 | 1,268.60 | 159.46 | 1,273.28 | 2.52 | 2.20 | 1.23 |
| 5,022.00 | 89.73 | 356.08 | 4,150.47 | 1,299.53 | 157.39 | 1,304.12 | 4.06 | -4.00 | -0.68 |
| 5,053.00 | 87.28 | 358.21 | 4,151.28 | 1,330.48 | 155.85 | 1,335.00 | 10.47 | -7.90 | 6.87 |

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,084.00 | 87.28 | 357.97 | 4,152.75 | 1,361.43 | 154.82 | 1,365.89 | 0.77 | 0.00 | -0.77 |
| 5,115.00 | 87.85 | 358.03 | 4,154.07 | 1,392.38 | 153.74 | 1,396.79 | 1.85 | 1.84 | 0.19 |
| 5,146.00 | 88.72 | 357.63 | 4,154.99 | 1,423.34 | 152.56 | 1,427.70 | 3.09 | 2.81 | -1.29 |
| 5,177.00 | 87.38 | 358.66 | 4,156.05 | 1,454.31 | 151.56 | 1,458.61 | 5.45 | -4.32 | 3.32 |
| 5,208.00 | 87.04 | 0.09 | 4,157.56 | 1,485.27 | 151.22 | 1,489.54 | 4.74 | -1.10 | 4.61 |
| 5,238.00 | 87.78 | 0.32 | 4,158.91 | 1,515.24 | 151.33 | 1,519.50 | 2.58 | 2.47 | 0.77 |
| 5,269.00 | 86.50 | 0.26 | 4,160.46 | 1,546.20 | 151.49 | 1,550.45 | 4.13 | -4.13 | -0.19 |
| 5,300.00 | 86.84 | 1.17 | 4,162.26 | 1,577.14 | 151.87 | 1,581.39 | 3.13 | 1.10 | 2.94 |
| 5,331.00 | 87.21 | 0.20 | 4,163.87 | 1,608.10 | 152.24 | 1,612.34 | 3.34 | 1.19 | -3.13 |
| 5,362.00 | 88.16 | 1.59 | 4,165.12 | 1,639.07 | 152.73 | 1,643.30 | 5.43 | 3.06 | 4.48 |
| 5,393.00 | 88.42 | 2.26 | 4,166.05 | 1,670.04 | 153.77 | 1,674.29 | 2.32 | 0.84 | 2.16 |
| 5,424.00 | 88.93 | 1.54 | 4,166.76 | 1,701.01 | 154.79 | 1,705.28 | 2.85 | 1.65 | -2.32 |
| 5,455.00 | 89.56 | 1.68 | 4,167.17 | 1,732.00 | 155.67 | 1,736.28 | 2.08 | 2.03 | 0.45 |
| 5,486.00 | 87.82 | 3.03 | 4,167.88 | 1,762.96 | 156.94 | 1,767.27 | 7.10 | -5.61 | 4.35 |
| 5,517.00 | 87.18 | 2.56 | 4,169.23 | 1,793.89 | 158.45 | 1,798.23 | 2.56 | -2.06 | -1.52 |
| 5,548.00 | 87.48 | 3.05 | 4,170.68 | 1,824.82 | 159.96 | 1,829.20 | 1.85 | 0.97 | 1.58 |
| 5,579.00 | 87.41 | 1.81 | 4,172.06 | 1,855.76 | 161.28 | 1,860.16 | 4.00 | -0.23 | -4.00 |
| 5,610.00 | 89.16 | 2.51 | 4,172.99 | 1,886.73 | 162.45 | 1,891.15 | 6.08 | 5.65 | 2.26 |
| 5,641.00 | 91.01 | 3.04 | 4,172.94 | 1,917.69 | 163.95 | 1,922.14 | 6.21 | 5.97 | 1.71 |
| 5,671.00 | 91.36 | 1.81 | 4,172.32 | 1,947.65 | 165.22 | 1,952.14 | 4.26 | 1.17 | -4.10 |
| 5,702.00 | 92.07 | 3.04 | 4,171.39 | 1,978.61 | 166.53 | 1,983.12 | 4.58 | 2.29 | 3.97 |
| 5,733.00 | 92.25 | 2.25 | 4,170.22 | 2,009.56 | 167.96 | 2,014.10 | 2.61 | 0.58 | -2.55 |
| 5,764.00 | 93.03 | 1.67 | 4,168.80 | 2,040.50 | 169.02 | 2,045.06 | 3.13 | 2.52 | -1.87 |
| 5,794.00 | 89.13 | 0.96 | 4,168.23 | 2,070.49 | 169.70 | 2,075.05 | 13.21 | -13.00 | -2.37 |
| 5,826.00 | 87.01 | 357.66 | 4,169.31 | 2,102.46 | 169.32 | 2,106.99 | 12.25 | -6.62 | -10.31 |
| 5,857.00 | 87.15 | 356.20 | 4,170.89 | 2,133.37 | 167.66 | 2,137.83 | 4.73 | 0.45 | -4.71 |
| 5,888.00 | 89.06 | 355.30 | 4,171.91 | 2,164.27 | 165.36 | 2,168.63 | 6.81 | 6.16 | -2.90 |
| 5,919.00 | 91.11 | 355.05 | 4,171.87 | 2,195.16 | 162.76 | 2,199.41 | 6.66 | 6.61 | -0.81 |
| 5,950.00 | 93.46 | 355.60 | 4,170.63 | 2,226.03 | 160.23 | 2,230.18 | 7.79 | 7.58 | 1.77 |
| 5,981.00 | 94.44 | 356.01 | 4,168.50 | 2,256.87 | 157.97 | 2,260.93 | 3.43 | 3.16 | 1.32 |
| 6,012.00 | 94.27 | 356.01 | 4,166.14 | 2,287.71 | 155.82 | 2,291.67 | 0.55 | -0.55 | 0.00 |
| 6,043.00 | 94.35 | 355.74 | 4,163.81 | 2,318.54 | 153.60 | 2,322.41 | 0.91 | 0.26 | -0.87 |
| 6,074.00 | 94.35 | 355.74 | 4,161.46 | 2,349.36 | 151.30 | 2,353.14 | 0.00 | 0.00 | 0.00 |
| 6,104.00 | 94.70 | 355.92 | 4,159.09 | 2,379.19 | 149.13 | 2,382.88 | 1.31 | 1.17 | 0.60 |
| 6,135.00 | 94.97 | 355.83 | 4,156.48 | 2,410.00 | 146.90 | 2,413.60 | 0.92 | 0.87 | -0.29 |
| 6,166.00 | 94.97 | 356.71 | 4,153.80 | 2,440.82 | 144.89 | 2,444.33 | 2.83 | 0.00 | 2.84 |
| 6,197.00 | 92.95 | 356.10 | 4,151.65 | 2,471.68 | 142.95 | 2,475.11 | 6.81 | -6.52 | -1.97 |
| 6,228.00 | 91.24 | 356.53 | 4,150.52 | 2,502.60 | 140.96 | 2,505.94 | 5.69 | -5.52 | 1.39 |
| 6,259.00 | 91.04 | 356.20 | 4,149.90 | 2,533.53 | 139.00 | 2,536.78 | 1.24 | -0.65 | -1.06 |
| 6,290.00 | 91.10 | 356.36 | 4,149.33 | 2,564.46 | 136.99 | 2,567.63 | 0.55 | 0.19 | 0.52 |
| 6,321.00 | 91.11 | 356.51 | 4,148.73 | 2,595.39 | 135.06 | 2,598.48 | 0.48 | 0.03 | 0.48 |
| 6,352.00 | 91.36 | 357.50 | 4,148.06 | 2,626.34 | 133.44 | 2,629.36 | 3.29 | 0.81 | 3.19 |
| 6,383.00 | 91.54 | 358.20 | 4,147.28 | 2,657.31 | 132.28 | 2,660.27 | 2.33 | 0.58 | 2.26 |
| 6,414.00 | 91.75 | 358.88 | 4,146.39 | 2,688.29 | 131.49 | 2,691.20 | 2.29 | 0.68 | 2.19 |

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 6,445.00 | 91.89 | 358.12 | 4,145.40 | 2,719.26 | 130.68 | 2,722.13 | 2.49 | 0.45 | -2.45 |
| 6,476.00 | 92.24 | 358.03 | 4,144.28 | 2,750.22 | 129.64 | 2,753.04 | 1.17 | 1.13 | -0.29 |
| 6,507.00 | 91.45 | 357.33 | 4,143.29 | 2,781.18 | 128.38 | 2,783.93 | 3.40 | -2.55 | -2.26 |
| 6,538.00 | 91.45 | 356.62 | 4,142.50 | 2,812.13 | 126.75 | 2,814.81 | 2.29 | 0.00 | -2.29 |
| 6,569.00 | 90.22 | 356.53 | 4,142.05 | 2,843.07 | 124.90 | 2,845.67 | 3.98 | -3.97 | -0.29 |
| 6,599.00 | 89.78 | 356.62 | 4,142.05 | 2,873.01 | 123.10 | 2,875.54 | 1.50 | -1.47 | 0.30 |
| 6,630.00 | 88.37 | 357.24 | 4,142.55 | 2,903.96 | 121.44 | 2,906.41 | 4.97 | -4.55 | 2.00 |
| 6,661.00 | 87.51 | 357.77 | 4,143.66 | 2,934.91 | 120.10 | 2,937.30 | 3.26 | -2.77 | 1.71 |
| 6,692.00 | 87.68 | 357.50 | 4,144.97 | 2,965.86 | 118.82 | 2,968.18 | 1.03 | 0.55 | -0.87 |
| 6,723.00 | 87.58 | 356.80 | 4,146.25 | 2,996.80 | 117.28 | 2,999.05 | 2.28 | -0.32 | -2.26 |
| 6,754.00 | 87.18 | 356.62 | 4,147.66 | 3,027.71 | 115.50 | 3,029.89 | 1.41 | -1.29 | -0.58 |
| 6,785.00 | 86.88 | 358.00 | 4,149.27 | 3,058.64 | 114.05 | 3,060.74 | 4.55 | -0.97 | 4.45 |
| 6,816.00 | 86.41 | 358.04 | 4,151.08 | 3,089.56 | 112.98 | 3,091.62 | 1.52 | -1.52 | 0.13 |
| 6,847.00 | 87.05 | 359.08 | 4,152.85 | 3,120.50 | 112.20 | 3,122.51 | 3.93 | 2.06 | 3.35 |
| 6,878.00 | 87.92 | 359.58 | 4,154.21 | 3,151.47 | 111.84 | 3,153.45 | 3.24 | 2.81 | 1.61 |
| 6,909.00 | 88.08 | 359.79 | 4,155.30 | 3,182.45 | 111.67 | 3,184.41 | 0.85 | 0.52 | 0.68 |
| 6,940.00 | 87.72 | 359.03 | 4,156.43 | 3,213.43 | 111.35 | 3,215.36 | 2.71 | -1.16 | -2.45 |
| 6,971.00 | 86.53 | 359.61 | 4,157.99 | 3,244.39 | 110.98 | 3,246.28 | 4.27 | -3.84 | 1.87 |
| 7,002.00 | 86.70 | 359.54 | 4,159.82 | 3,275.33 | 110.75 | 3,277.20 | 0.59 | 0.55 | -0.23 |
| 7,032.00 | 87.11 | 359.99 | 4,161.44 | 3,305.29 | 110.63 | 3,307.14 | 2.03 | 1.37 | 1.50 |
| 7,063.00 | 88.01 | 1.25 | 4,162.76 | 3,336.26 | 110.96 | 3,338.10 | 4.99 | 2.90 | 4.06 |
| 7,094.00 | 88.35 | 0.51 | 4,163.74 | 3,367.24 | 111.44 | 3,369.08 | 2.63 | 1.10 | -2.39 |
| 7,125.00 | 88.76 | 0.23 | 4,164.52 | 3,398.23 | 111.64 | 3,400.06 | 1.60 | 1.32 | -0.90 |
| 7,156.00 | 88.79 | 0.89 | 4,165.18 | 3,429.22 | 111.94 | 3,431.04 | 2.13 | 0.10 | 2.13 |
| 7,187.00 | 86.97 | 1.63 | 4,166.33 | 3,460.19 | 112.62 | 3,462.02 | 6.34 | -5.87 | 2.39 |
| 7,218.00 | 86.37 | 2.19 | 4,168.13 | 3,491.12 | 113.66 | 3,492.96 | 2.65 | -1.94 | 1.81 |
| 7,249.00 | 86.06 | 1.48 | 4,170.18 | 3,522.03 | 114.65 | 3,523.90 | 2.49 | -1.00 | -2.29 |
| 7,280.00 | 87.58 | 1.43 | 4,171.90 | 3,552.98 | 115.43 | 3,554.85 | 4.91 | 4.90 | -0.16 |
| 7,311.00 | 88.15 | 0.77 | 4,173.05 | 3,583.95 | 116.03 | 3,585.82 | 2.81 | 1.84 | -2.13 |
| 7,342.00 | 88.89 | 359.99 | 4,173.85 | 3,614.94 | 116.23 | 3,616.80 | 3.47 | 2.39 | -2.52 |
| 7,373.00 | 89.66 | 359.03 | 4,174.25 | 3,645.93 | 115.97 | 3,647.77 | 3.97 | 2.48 | -3.10 |
| 7,404.00 | 90.40 | 358.70 | 4,174.23 | 3,676.93 | 115.35 | 3,678.72 | 2.61 | 2.39 | -1.06 |
| 7,435.00 | 90.57 | 358.35 | 4,173.97 | 3,707.91 | 114.55 | 3,709.67 | 1.26 | 0.55 | -1.13 |
| 7,466.00 | 88.90 | 358.91 | 4,174.11 | 3,738.90 | 113.81 | 3,740.61 | 5.68 | -5.39 | 1.81 |
| 7,497.00 | 88.72 | 359.52 | 4,174.75 | 3,769.89 | 113.39 | 3,771.57 | 2.05 | -0.58 | 1.97 |
| 7,528.00 | 89.16 | 359.43 | 4,175.33 | 3,800.89 | 113.11 | 3,802.54 | 1.45 | 1.42 | -0.29 |
| 7,558.00 | 89.25 | 0.67 | 4,175.74 | 3,830.88 | 113.13 | 3,832.52 | 4.14 | 0.30 | 4.13 |
| 7,584.00 | 89.53 | 0.02 | 4,176.02 | 3,856.88 | 113.29 | 3,858.51 | 2.72 | 1.08 | -2.50 |
| 7,615.00 | 88.72 | 2.03 | 4,176.49 | 3,887.87 | 113.84 | 3,889.50 | 6.99 | -2.61 | 6.48 |
| 7,646.00 | 88.35 | 3.18 | 4,177.29 | 3,918.83 | 115.25 | 3,920.48 | 3.90 | -1.19 | 3.71 |
| 7,677.00 | 88.35 | 4.21 | 4,178.18 | 3,949.75 | 117.25 | 3,951.46 | 3.32 | 0.00 | 3.32 |
| 7,708.00 | 87.35 | 3.50 | 4,179.34 | 3,980.66 | 119.33 | 3,982.42 | 3.96 | -3.23 | -2.29 |
| 7,739.00 | 86.63 | 4.10 | 4,180.97 | 4,011.55 | 121.38 | 4,013.36 | 3.02 | -2.32 | 1.94 |

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 7,770.00 | 86.79 | 3.30 | 4,182.75 | 4,042.43 | 123.38 | 4,044.29 | 2.63 | 0.52 | -2.58 |
| 7,801.00 | 87.14 | 3.24 | 4,184.39 | 4,073.34 | 125.14 | 4,075.24 | 1.15 | 1.13 | -0.19 |
| 7,832.00 | 87.34 | 2.99 | 4,185.88 | 4,104.26 | 126.83 | 4,106.20 | 1.03 | 0.65 | -0.81 |
| 7,863.00 | 87.76 | 4.44 | 4,187.21 | 4,135.16 | 128.83 | 4,137.15 | 4.87 | 1.35 | 4.68 |
| 7,894.00 | 89.25 | 3.48 | 4,188.02 | 4,166.08 | 130.97 | 4,168.12 | 5.72 | 4.81 | -3.10 |
| 7,925.00 | 89.78 | 3.39 | 4,188.28 | 4,197.02 | 132.83 | 4,199.11 | 1.73 | 1.71 | -0.29 |
| 7,956.00 | 90.31 | 3.92 | 4,188.26 | 4,227.96 | 134.81 | 4,230.10 | 2.42 | 1.71 | 1.71 |
| 7,987.00 | 90.57 | 3.21 | 4,188.02 | 4,258.89 | 136.74 | 4,261.08 | 2.44 | 0.84 | -2.29 |
| 8,017.00 | 91.54 | 4.62 | 4,187.47 | 4,288.82 | 138.78 | 4,291.06 | 5.70 | 3.23 | 4.70 |
| 8,048.00 | 89.78 | 3.74 | 4,187.11 | 4,319.73 | 141.04 | 4,322.03 | 6.35 | -5.68 | -2.84 |
| 8,079.00 | 89.60 | 4.53 | 4,187.28 | 4,350.65 | 143.28 | 4,353.01 | 2.61 | -0.58 | 2.55 |
| 8,110.00 | 89.66 | 4.16 | 4,187.48 | 4,381.56 | 145.63 | 4,383.98 | 1.21 | 0.19 | -1.19 |
| 8,141.00 | 88.39 | 2.62 | 4,188.00 | 4,412.50 | 147.46 | 4,414.96 | 6.44 | -4.10 | -4.97 |
| 8,172.00 | 88.18 | 3.39 | 4,188.93 | 4,443.44 | 149.08 | 4,445.94 | 2.57 | -0.68 | 2.48 |
| 8,203.00 | 88.76 | 2.47 | 4,189.76 | 4,474.39 | 150.67 | 4,476.93 | 3.51 | 1.87 | -2.97 |
| 8,234.00 | 88.11 | 2.42 | 4,190.61 | 4,505.35 | 151.99 | 4,507.91 | 2.10 | -2.10 | -0.16 |
| 8,265.00 | 88.37 | 3.13 | 4,191.56 | 4,536.30 | 153.49 | 4,538.90 | 2.44 | 0.84 | 2.29 |
| 8,296.00 | 87.67 | 2.69 | 4,192.63 | 4,567.24 | 155.06 | 4,569.87 | 2.67 | -2.26 | -1.42 |
| 8,327.00 | 87.14 | 1.28 | 4,194.03 | 4,598.19 | 156.13 | 4,600.84 | 4.85 | -1.71 | -4.55 |
| 8,358.00 | 87.76 | 2.16 | 4,195.41 | 4,629.15 | 157.06 | 4,631.81 | 3.47 | 2.00 | 2.84 |
| 8,389.00 | 87.67 | 1.72 | 4,196.65 | 4,660.10 | 158.11 | 4,662.78 | 1.45 | -0.29 | -1.42 |
| 8,420.00 | 86.35 | 1.46 | 4,198.27 | 4,691.05 | 158.97 | 4,693.74 | 4.34 | -4.26 | -0.84 |
| 8,451.00 | 85.65 | 0.40 | 4,200.43 | 4,721.97 | 159.47 | 4,724.66 | 4.09 | -2.26 | -3.42 |
| 8,482.00 | 85.66 | 359.75 | 4,202.78 | 4,752.88 | 159.51 | 4,755.55 | 2.09 | 0.03 | -2.10 |
| 8,513.00 | 87.04 | 0.57 | 4,204.75 | 4,783.81 | 159.60 | 4,786.48 | 5.18 | 4.45 | 2.65 |
| 8,544.00 | 88.02 | 359.70 | 4,206.09 | 4,814.79 | 159.67 | 4,817.43 | 4.23 | 3.16 | -2.81 |
| 8,575.00 | 88.12 | 358.92 | 4,207.13 | 4,845.77 | 159.30 | 4,848.38 | 2.54 | 0.32 | -2.52 |
| 8,606.00 | 88.64 | 0.31 | 4,208.01 | 4,876.75 | 159.09 | 4,879.34 | 4.79 | 1.68 | 4.48 |
| 8,637.00 | 88.55 | 359.17 | 4,208.77 | 4,907.74 | 158.95 | 4,910.31 | 3.69 | -0.29 | -3.68 |
| 8,667.00 | 88.55 | 359.52 | 4,209.53 | 4,937.73 | 158.61 | 4,940.27 | 1.17 | 0.00 | 1.17 |
| 8,698.00 | 88.20 | 359.17 | 4,210.40 | 4,968.71 | 158.26 | 4,971.22 | 1.60 | -1.13 | -1.13 |
| 8,729.00 | 87.05 | 359.08 | 4,211.69 | 4,999.68 | 157.78 | 5,002.16 | 3.72 | -3.71 | -0.29 |
| 8,760.00 | 86.44 | 359.35 | 4,213.45 | 5,030.63 | 157.36 | 5,033.07 | 2.15 | -1.97 | 0.87 |
| 8,791.00 | 86.44 | 359.96 | 4,215.37 | 5,061.57 | 157.17 | 5,063.99 | 1.96 | 0.00 | 1.97 |
| 8,822.00 | 86.64 | 0.92 | 4,217.25 | 5,092.51 | 157.41 | 5,094.92 | 3.16 | 0.65 | 3.10 |
| 8,853.00 | 87.24 | 359.27 | 4,218.90 | 5,123.47 | 157.46 | 5,125.86 | 5.66 | 1.94 | -5.32 |
| 8,884.00 | 88.03 | 0.38 | 4,220.18 | 5,154.44 | 157.37 | 5,156.81 | 4.39 | 2.55 | 3.58 |
| 8,915.00 | 87.93 | 1.10 | 4,221.27 | 5,185.42 | 157.77 | 5,187.79 | 2.34 | -0.32 | 2.32 |
| 8,946.00 | 86.84 | 0.51 | 4,222.69 | 5,216.38 | 158.20 | 5,218.75 | 4.00 | -3.52 | -1.90 |
| 8,977.00 | 86.61 | 0.67 | 4,224.46 | 5,247.33 | 158.52 | 5,249.69 | 0.90 | -0.74 | 0.52 |
| 9,007.00 | 86.84 | 1.63 | 4,226.17 | 5,277.27 | 159.12 | 5,279.63 | 3.29 | 0.77 | 3.20 |
| 9,038.00 | 87.88 | 0.03 | 4,227.60 | 5,308.24 | 159.57 | 5,310.59 | 6.15 | 3.35 | -5.16 |
| 9,069.00 | 87.76 | 0.23 | 4,228.78 | 5,339.21 | 159.64 | 5,341.56 | 0.75 | -0.39 | 0.65 |

# LEAM Drilling Systems LLC

## Survey Report

| | | | |
|---|---|---|---|
| **Company:** | WPX Energy | **Local Co-ordinate Reference:** | Well 1-21H |
| **Project:** | Pratt County, KS (NAD 83) | **TVD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Site:** | Schepmann | **MD Reference:** | GE 1906' + KB 10' @ 1916.00usft |
| **Well:** | 1-21H | **North Reference:** | Grid |
| **Wellbore:** | ST01 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | ST01 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,100.00 | 88.02 | 0.58 | 4,229.92 | 5,370.19 | 159.86 | 5,372.52 | 1.41 | 0.84 | 1.13 |
| 9,131.00 | 88.99 | 1.72 | 4,230.73 | 5,401.17 | 160.48 | 5,403.51 | 4.83 | 3.13 | 3.68 |
| 9,160.00 | 88.55 | 0.67 | 4,231.35 | 5,430.16 | 161.09 | 5,432.50 | 3.92 | -1.52 | -3.62 |
| 9,191.00 | 89.63 | 0.95 | 4,231.84 | 5,461.15 | 161.52 | 5,463.49 | 3.60 | 3.48 | 0.90 |
| 9,222.00 | 89.92 | 0.81 | 4,231.97 | 5,492.15 | 162.00 | 5,494.48 | 1.04 | 0.94 | -0.45 |
| 9,253.00 | 89.22 | 1.65 | 4,232.20 | 5,523.14 | 162.67 | 5,525.48 | 3.53 | -2.26 | 2.71 |
| 9,284.00 | 88.69 | 1.34 | 4,232.76 | 5,554.13 | 163.47 | 5,556.47 | 1.98 | -1.71 | -1.00 |
| 9,314.00 | 87.91 | 0.96 | 4,233.65 | 5,584.11 | 164.08 | 5,586.46 | 2.89 | -2.60 | -1.27 |
| 9,345.00 | 88.42 | 1.91 | 4,234.65 | 5,615.08 | 164.85 | 5,617.44 | 3.48 | 1.65 | 3.06 |
| 9,376.00 | 88.99 | 1.68 | 4,235.35 | 5,646.06 | 165.82 | 5,648.43 | 1.98 | 1.84 | -0.74 |
| 9,407.00 | 88.76 | 1.02 | 4,235.96 | 5,677.04 | 166.55 | 5,679.42 | 2.25 | -0.74 | -2.13 |
| 9,438.00 | 88.95 | 1.27 | 4,236.57 | 5,708.03 | 167.17 | 5,710.42 | 1.01 | 0.61 | 0.81 |
| 9,469.00 | 89.90 | 1.06 | 4,236.89 | 5,739.02 | 167.80 | 5,741.41 | 3.14 | 3.06 | -0.68 |
| 9,500.00 | 90.03 | 0.86 | 4,236.90 | 5,770.02 | 168.32 | 5,772.41 | 0.77 | 0.42 | -0.65 |
| 9,531.00 | 90.30 | 0.04 | 4,236.82 | 5,801.02 | 168.57 | 5,803.39 | 2.78 | 0.87 | -2.65 |
| 9,543.00 | 90.40 | 0.14 | 4,236.74 | 5,813.01 | 168.58 | 5,815.39 | 1.18 | 0.83 | 0.83 |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL (Schepmann 1-21 | 0.00 | 360.00 | 4,144.00 | 5,829.04 | 151.26 | 1,721,479.42 | 1,274,468.29 | 37.790245 | -98.631037 |
| - actual wellpath misses target center by 95.70usft at 9543.00usft MD (4236.74 TVD, 5813.01 N, 168.58 E) | | | | | | | | | |
| - Point | | | | | | | | | |