Form 3160-5
(August 2007)

OCD Hobbs
HOBBS OCD
AUG 05 2014
RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**
***Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***

***SUBMIT IN TRIPLICATE - Other instructions on reverse side.***

5. Lease Serial No.
NMNM129262

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
COX 35 FEDERAL 1H

2. Name of Operator
ENERGEN RESOURCES CORPORATION
Contact: BRENDA F RATHJEN
Email: brenda.rathjen@energen.com

9. API Well No.
30-025-41520-00-X1

3a. Address
3300 NORTH A STREET BLDG 4 SUITE 100
MIDLAND, TX 79705

3b. Phone No. (include area code)
Ph: 432-688-3323

10. Field and Pool, or Exploratory
TRISTE DRAW

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 35 T23S R32E SESE 200FSL 400FEL
32.757103 N Lat, 103.387537 W Lon

11. County or Parish, and State
LEA COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☒ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Subsequent Report | ☐ Alter Casing | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other Drilling Operations |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

ENERGEN RESOURCES CORPORATION REQUESTS TO EXTEND BHL ON THE APD TO MATCH THE CURRENT PLAT AND BACKUP. NEW PROPOSED BHL:
TMD - 15,539'
TVD - 10,955.2'

ATTACHMENTS TO THIS SUNDRY INCLUDE:
STANDARD PLANNING REPORT DATED 30 JULY 2014
PLAN #2 PROJECT DETAILS FOR COX 35 FEDERAL #1H
NEW WELL BORE DIAGRAM
DRILLING PLAN
PLAT

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #255210 verified by the BLM Well Information System**
**For ENERGEN RESOURCES CORPORATION, sent to the Hobbs**
**Committed to AFMSS for processing by ED FERNANDEZ on 07/31/2014 (14EF0083SE)**

Name *(Printed/Typed)* NATE BINGHAM — Title DRILLING ENGINEER

Signature (Electronic Submission) — Date 07/31/2014

APPROVED
JUL 31 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By EDWARD FERNANDEZ — Title PETROLEUM ENGINEER — Date 07/31/2014

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

AUG 08 2014

## Additional data for EC transaction #255210 that would not fit on the form

**32. Additional remarks, continued**

THANK YOU!

HOBBS OCD

NOV 26 2013

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DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
811 South First, Artesia, NM 88210

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

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

# State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-025-41520 | 96603 | TRISTE DRAW BONE SPRING |

| Property Code | Property Name | Well Number |
|---|---|---|
| ~~38694~~ 40257 | COX FEDERAL 35 G | 1H |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 162928 | EMERGEN RESOURCES CORPORATION | 3649.5 |

### Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 35 | 23-S | 32-E | | 200 | South | 400 | East | LEA |

### 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 |
|---|---|---|---|---|---|---|---|---|---|
| A | 35 | 23-S | 32-E | | 330 | North | 400 | East | LEA |

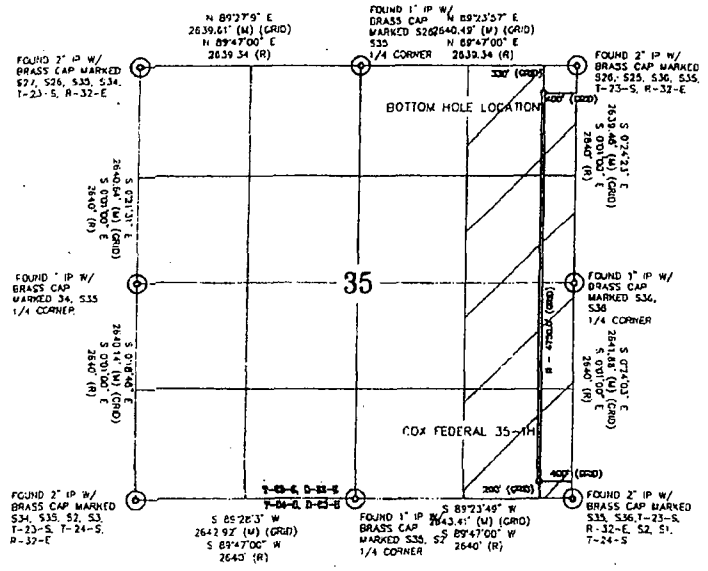
| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 160 | | | |

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

COX FEDERAL 35-1H
LAT: 32°15'18.060"
LON: 103°38'17.574"

## SECTION 35
## T-23-S, R-32-E

BOTTOM HOLE LOCATION
LAT: 32°16'03.092"
LON: 103°38'17.403"




NOTES
1. COORDINATES AND BEARINGS ARE BASED ON LAMBERT CONICAL PROJECTION OF THE STATE PLANE COORDINATE SYSTEM NAD 83, CORS 96, TEXAS CENTRAL ZONE WITH A CONVERGENCE ANGLE OF 0.37067599 AND DISTANCES ARE OF GRID VALUE WITH A CENTRAL COMBINED SCALE FACTOR OF 0.99978903 THE POSITIONAL TOLERANCE OF THIS SURVEY EXCEEDS THE REQUIREMENTS FOR A CONSTRUCTION SURVEY
2. SCALE 1" = 2000'

### OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or compulsory pooling order heretofore entered by the division.

Signature — Date: 7/22/13

Nathan Smith
Printed Name

7/22/13
Date

### 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 supervison, and that the same is true and correct to the best of my belief.

7/18/2013
Date Surveyed

Signature & Seal of Professional Surveyor

NEW MEXICO PROFESSIONAL ENGINEER STATE OF LAND SURVEYOR WILSON D. WATSON JR. 3959

Certificate No. WILSON D. WATSON JR. P.L.S. #3959

WATSON PROFESSSIONAL GROUP INC

Drilling Plan
Energen Resources Corporation
Revised 1/9/2014

**Cox 35 Federal #001H**
Surface Location: 200' FSL & 400' FEL
Section 35-23S-32E, 32° 15' 16.060"/-130° 38' 17.374"
Bottom Hole Location: 330' FNL & 400' FEL
Section 35-23S-32E, 32° 16' 03.092"/-130° 38' 17.403"
Lea Co., NM

Essentially Original COA Still Applies

1. The elevation of the unprepared ground is 3649.5 feet above sea level.
2. The geological name of the surface formation is Quaternary Eolian and Piedmont deposits
3. A rotary rig will be utilized to drill the well to a Proposed Total Depth of 10,991' TVD/14,835' MD.
4. Estimated top of important geological markers:

| FORMATION | DEPTH (TVD)(ft) | SUBSEA(ft) |
|---|---|---|
| Rustler | 1,162 | 2,509 |
| Top of Evaporite | 1,302 | 2,369 |
| Base of Evaporite | 4,732 | -1,061 |
| Bell Canyon | 5,023 | -1,352 |
| Cherry Canyon | 5,869 | -2,198 |
| Brushy Canyon | 7,219 | -3,548 |
| Bone Springs | 8,802 | -5,131 |
| Avalon | 8,931 | -5,260 |
| 1st Bone Spring Carbonate | 9,849 | -6,178 |
| 1st Bone Spring Sand | 9,982 | -6,311 |
| 2nd Bone Spring Carbonate | 10,316 | -6,645 |
| 2nd Bone Spring Sand | 10,631 | -6,960 |
| 3rd Bone Spring Carbonate | 11,091 | -7,420 |

5. Estimated depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

| FORMATION | DEPTH (TVD)(ft) | Water/HydroCarbon |
|---|---|---|
| Rustler | 1,162 | Water |
| Top of Evaporite | 1,302 | NA |
| Base of Evaporite | 4,732 | NA |
| Bell Canyon | 5,023 | Oil/Gas |
| Cherry Canyon | 5,869 | Oil/Gas |
| Brushy Canyon | 7,219 | Oil/Gas |
| Bone Springs | 8,802 | NA |
| Avalon | 8,931 | Oil/Gas |
| 1st Bone Spring Carbonate | 9,849 | NA |
| 1st Bone Spring Sand | 9,982 | Oil/Gas |
| 2nd Bone Spring Carbonate | 10,316 | NA |
| 2nd Bone Spring Sand | 10,631 | Oil/Gas |
| 3rd Bone Spring Carbonate | 11,091 | NA |

6. All proposed casing is new and the program is as follows:

| Casing | Size | Depth | | Grade | Weight | Connection | PSI | | x1000 lbs |
|---|---|---|---|---|---|---|---|---|---|
| | | MD | TVD | | | | Collapse | Burst | Tension |
| Surface | 13-3/8" | ~~0-1,200'~~ 1280 | ~~0-1,200'~~ | J-55 | 54.50 | BTC | 1,130 | 2,730 | 909 |
| Intermediate | 9-5/8" | 0-4,850' | 0-4,850' | J-55 | 40.00 | BTC | 2,570 | 3,950 | 714 |
| Production (Attch C-2) | 5-1/2" | 0-15,499.9' | 0-10,952' | RYS-110 | 20.00 | CDC HTQ | 11,100 | 12,640 | 641 |

7. Cementing Program:

   a. 17-1/2" hole x 13-3/8" casing at 1,200' will have cement circulated to surface with 540 sx of Econocem – HLC with 1 lbm/sk Kol-Seal at 12.8 ppg (1.81 cf/sk) followed by 250 sx HalCem – C with 1 lbm/sk Kol-Seal at 14.8 ppg (1.33 cf/sk). Note: CEMENT MUST BE CIRCULATED TO SURFACE. STANDARD BOW SPRING CENTRALIZERS SHALL BE PLACED ON THE FIRST 3 (BOTTOM 3) JOINTS OF CASING (1 PER JOINT) AND 1 EVERY 3RD JOINT TO SURFACE.

   b. 12-1/4" hole x 9-5/8" casing at 4,850'. A fluid caliper will be run to determine the exact cement volume required. Cement will be circulated to surface with 890 sx of Econo-Cem – C with 2lbm/sk Kol- Seal, 0.25 lbm/sk D-AIR 5000 at 11.9 ppg (2.45 cf/sk) followed by 220 sx of HalCem-C with 1 lbm/sk Kol-Seal at 14.8 ppg (1.33 cf/sk). ONE CENTRALIZER PER JOINT FOR THE FIRST 3 JOINTS, THEN EVERY 3RD JOINT TO SURFACE.

   c. 8-3/4" hole x 5-1/2" casing at 15,499.9'. A fluid caliper will be run to determine the exact cement volume required to have TOC at ~~4,680'~~ See original COA 200' tie back Required. 3100 sx of VersaCem-H with 0.4% Halad(R)-344, 0.3% Super CBL, 0.4% HR-800 at 14.4 ppg (1.25 cf/sk). DV tool will be utilized at ~~10,000' if losses~~ are encountered. CENTRALIZERS TO BE USED AT DISCRETION IN LATERAL TO ACHIEVE 70% STAND OFF. CENTRALIZERS TO BE USED TO TIE BACK DEPTH OF 4,680' TO ACHIEVE 70% STAND OFF. See original COA

8. Pressure Control Equipment

   a. 12-1/4" hole section: The blowout preventer equipment (BOP) will consist of a 5,000 psi system double ram type preventer, a bag type (Hydril) preventer and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and corresponding pipe rams based on hole section being drilled. A 13-5/8" 5M x SOW will be installed on the 13-3/8" surface casing and utilized until the 9-5/8" casing is set. The BOP and associated equipment will be tested to rated pressure, before drilling out the 13-3/8" casing shoe the casing will be tested to 2,000 psi. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 5,000 psi WP rating.

   b. 8-3/4" hole section: The blowout preventer equipment (BOP) will consist of a 5,000 psi system double ram type preventer, a bag type (Hydril) preventer and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and corresponding pipe rams based on hole section being drilled. A 13-3/8" 5M x 11" 10M wellhead will be installed. The BOP and associated equipment will be tested to rated pressure, before drilling out the 9-5/8" casing shoe the casing will be tested to 2,000 psi. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include an Upper and Lower Kelly cock, floor safety valve, choke lines and choke manifold having 5,000 psi WP rating. All equipment used will meet standards for a Hydrogen Sulfide environment.

c. Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drilling logs.

See Original COA

9. Mud Program:

| | |
|---|---|
| 0' - 1,200' 1280 | Bentonite/Lime mud. Paper for losses and seepage. 8.5 to 9.0 ppg, 32 to 34 vis, PV 3 to 5, YP 5 to 7, WL NC |
| 1,200' - 4,850' | Brine. As needed LCM for losses and seepage. 10.0 to 10.2 ppg, pH 10, 28 to 29 vis, PV 1, YP 1, WL NC |
| 4,850' - 15,499.9' | Cut Brine. As needed LCM for losses and seepage. 9.0 to 9.5 ppg, pH 10, 28 to 36 vis, PV 4-6, YP 4-6, WL 12-15 |

****During drilling operations, all necessary products will be sufficiently stored on location for abnormal situations. The characteristics, use, testing of drilling mud and the implementation of related drilling procedures shall be designed to prevent the loss of well control. Sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring well control.**

****A pH of 10 or above in the fresh water base mud system shall be maintained to control the effects $H_2S$ has on metallurgy of equipment used.**

Operating and Maintenance

Energen Resources Corporation will be using all above ground steel pits for fluid and cuttings while drilling. If any tank develops a leak we will have immediate visual discovery, we would then transfer the fluid to another tank then remove any contaminated soil and dispose of it in the cuttings bins for transportation. All leaks should be kept to less than 5 barrels. Rig crews will monitor the tanks at all times. A trip/surge tank will be used to monitor returns for circulation losses/gains.

Equipment:

2-Mongoose Shale Shakers

2-3400 High Speed Centrifuges with stands and pumps

3-Roll off bins with Tracks

2-500 bbl Open top Frac tanks

1-Mud/Gas Separator and Degasser

1-Trip/Surge Tank

Electronic or Visual monitoring system to indicate lost returns

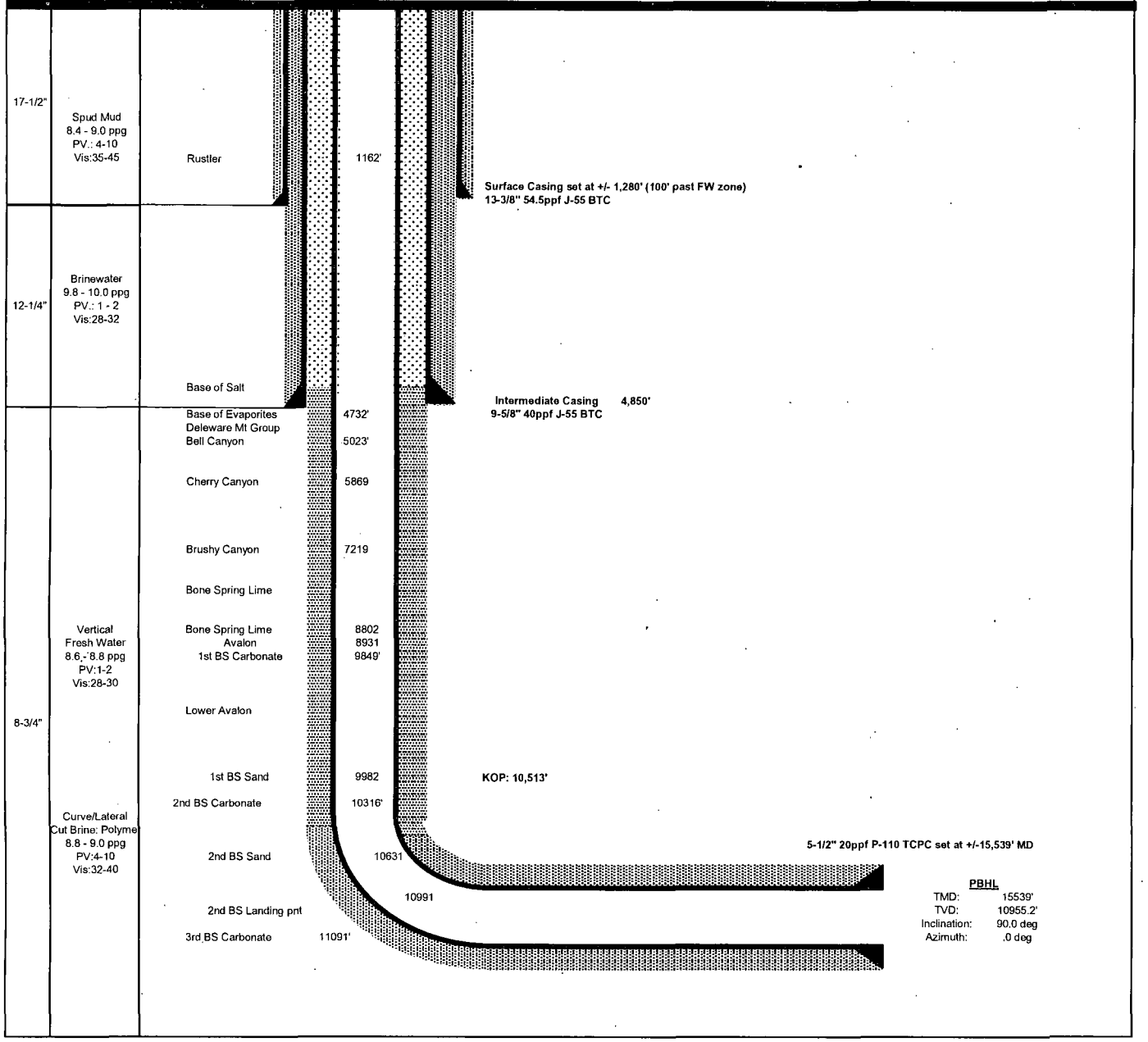
10. Testing, Logging and Coring Program:

See original COA

a. Testing Program: No drillstem tests are anticipated
b. Electric Logging Program: TBD
c. LWD Program: TBD
d. Coring Program: None.

11. Bottom Hole Pressure expected to be 5,430 psi
12. Bottom Hole Temperature expected to be 160 deg F.

| | | | | | |
|---|---|---|---|---|---|
| **Drilling Engineer:** | Nate Bingham | **Well Name:** | Cox 35 Federal #1H | **Drilling Rig:** | Nabors M25 |
| **Superintendent:** | Cecil Littrell | **Formation:** | 2nd Bone Springs | **Directional Drilling:** | Terra Directional |
| **Geologist:** | Christa Brown | **County, State:** | Lea County, New Mexico | **Drilling Fluids:** | AES |
| | | **Surface Location:** | 200' FSL & 400' FEL (SE/SE) Sec. 35 T23S, R32E | **Surface Cement:** | CREST |
| | | **BH Location:** | 300' FNL & 400' FEL (NE/NE) Sec. 35 T23S, R32E | **Production Cement:** | CREST |
| | | **Surface Lat:** | 32.751599 **Surface Long:** 103.383880 | **Wellhead:** | CAMERON |
| | | **KB Elevation:** | 3672' **Rig KB:** 22' **Ground Elevation:** 3650' | **AFE#:** | PB010314 |



## Section Details

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 10474.5 | 0.00 | 0.00 | 10474.5 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 11224.6 | 90.00 | 359.60 | 10952.0 | 477.5 | -3.3 | 12.00 | 359.60 | 477.5 | |
| 4 | 15499.9 | 90.00 | 359.60 | 10952.0 | 4752.8 | -33.2 | 0.00 | 0.00 | 4752.9 | PBHL(CF#2H) |

Energen Resources Corporation
Project: Permian Basin(Lea County, NM)
Site: Cox Federal 35
Well: #1H
Wellbore: OH
Plan: Plan #2 (#1H/OH)

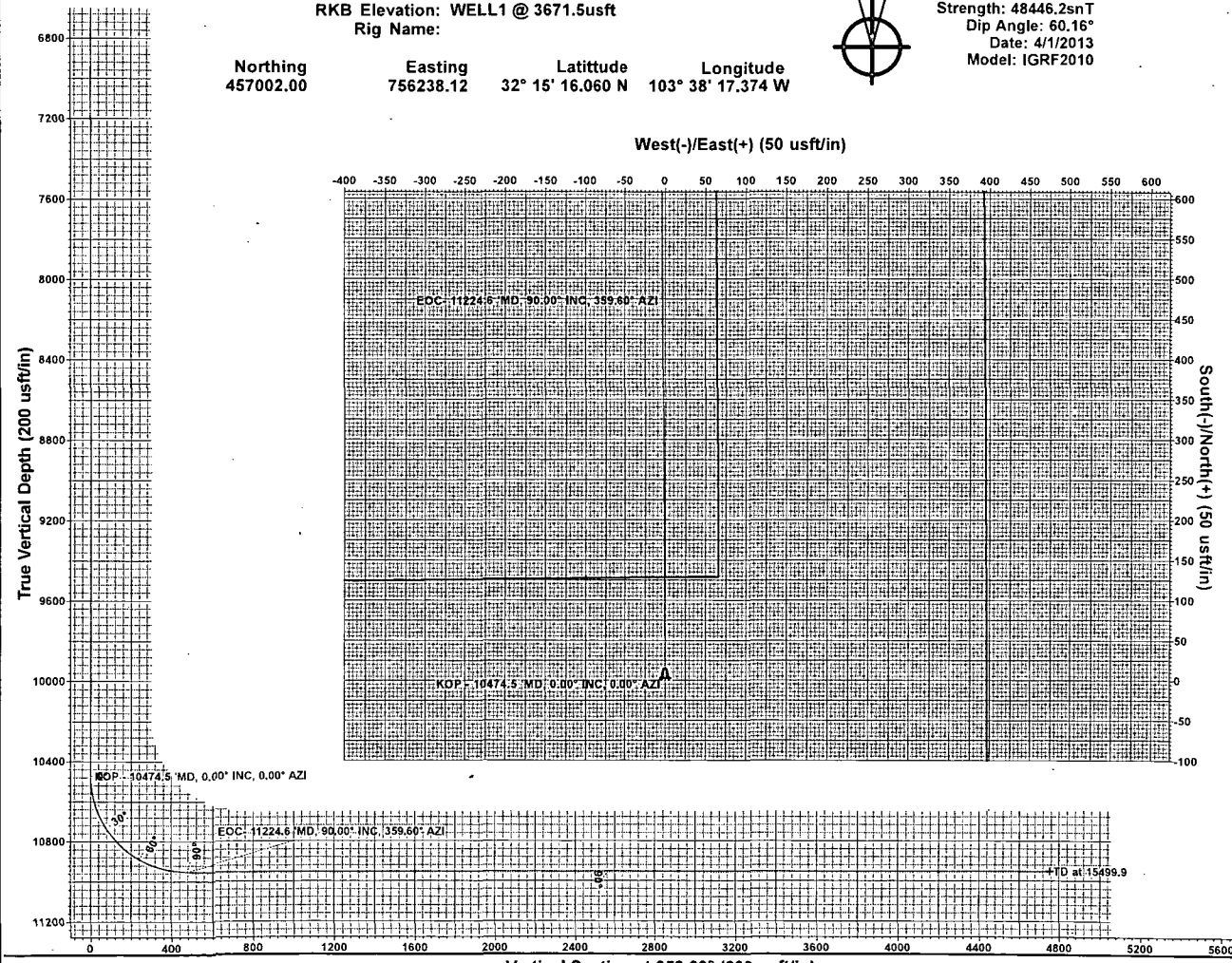
WELL DETAILS: #1H

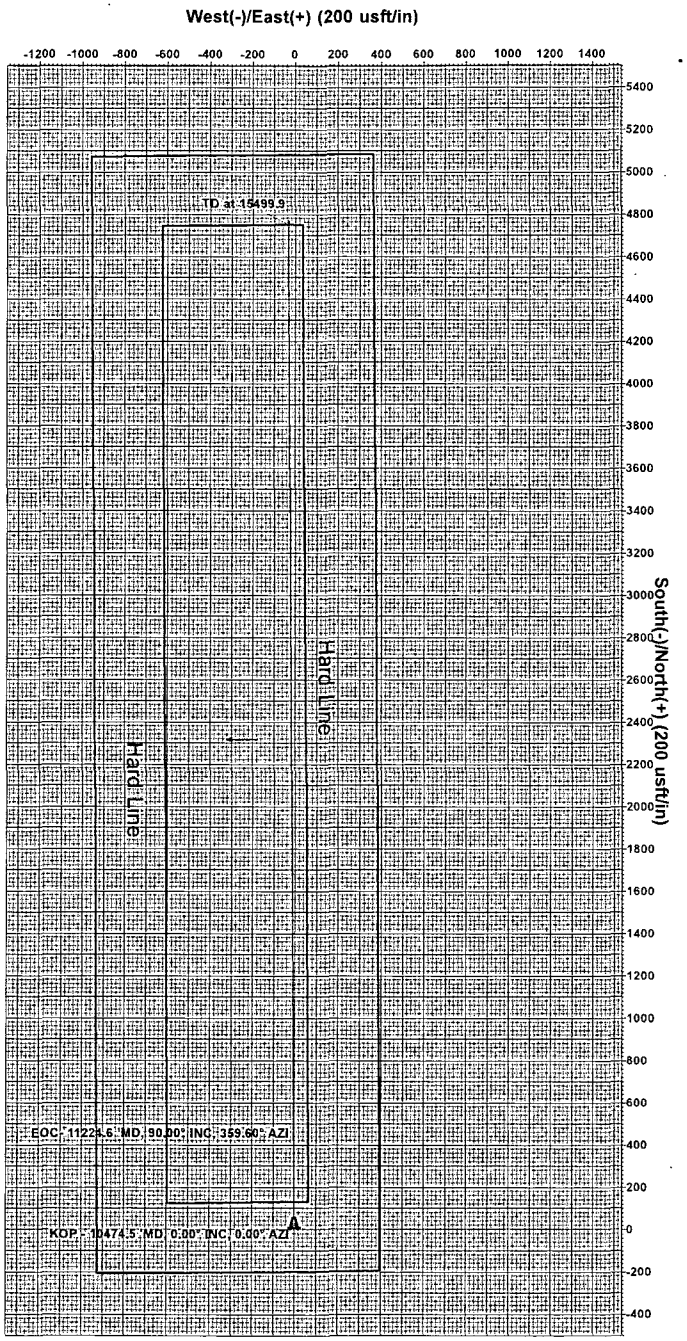
Ground Elevation:: 3649.5
RKB Elevation: WELL1 @ 3671.5usft
Rig Name:

| Northing | Easting | Latittude | Longitude |
|---|---|---|---|
| 457002.00 | 756238.12 | 32° 15' 16.060 N | 103° 38' 17.374 W |


Azimuths to Grid North
True North: -0.37°
Magnetic North: 7.03°

Magnetic Field
Strength: 48446.2snT
Dip Angle: 60.16°
Date: 4/1/2013
Model: IGRF2010




Plan: Plan #2 (#1H/OH)
Created By: Well Planner Date: 8:27, July 30 2014

Terra Directional Services
322 Spring Hill Drive, Suite A100. Spring,Texas 77386
432.425.7532

PROJECT DETAILS: Permian Basin(Lea County, NM)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid

# Energen Resources Corporation

**Permian Basin(Lea County, NM)**
**Cox Federal 35**
**#1H**

**OH**

**Plan: Plan #2**

# Standard Planning Report

**30 July, 2014**

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #1H |
| **Company:** | Energen Resources Corporation | **TVD Reference:** | WELL1 @ 3671.5usft |
| **Project:** | Permian Basin(Lea County, NM) | **MD Reference:** | WELL1 @ 3671.5usft |
| **Site:** | Cox Federal 35 | **North Reference:** | Grid |
| **Well:** | #1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #2 | | |

**Project** Permian Basin(Lea County, NM)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

**Site** Cox Federal 35

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 457,002.00 usft | **Latitude:** | 32° 15' 16.060 N |
| **From:** | Lat/Long | **Easting:** | 756,238.12 usft | **Longitude:** | 103° 38' 17.374 W |
| **Position Uncertainty:** | 2.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.37 ° |

**Well** #1H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 457,002.00 usft | **Latitude:** | 32° 15' 16.060 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 756,238.12 usft | **Longitude:** | 103° 38' 17.374 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,649.5 usft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 4/1/2013 | 7.40 | 60.16 | 48,446 |

**Design** Plan #2

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 359.60 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 10,474.5 | 0.00 | 0.00 | 10,474.5 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 11,224.6 | 90.00 | 359.60 | 10,952.0 | 477.5 | -3.3 | 12.00 | 12.00 | 0.00 | 359.60 | |
| 15,499.9 | 90.00 | 359.60 | 10,952.0 | 4,752.8 | -33.2 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL(CF#2H) |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #1H |
| **Company:** | Energen Resources Corporation | **TVD Reference:** | WELL1 @ 3671.5usft |
| **Project:** | Permian Basin(Lea County, NM) | **MD Reference:** | WELL1 @ 3671.5usft |
| **Site:** | Cox Federal 35 | **North Reference:** | Grid |
| **Well:** | #1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 0.00 | 0.00 | 1,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,700.0 | 0.00 | 0.00 | 1,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 0.00 | 0.00 | 1,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 0.00 | 0.00 | 1,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 0.00 | 0.00 | 2,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 0.00 | 0.00 | 2,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 0.00 | 0.00 | 2,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 0.00 | 0.00 | 2,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 0.00 | 0.00 | 2,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 0.00 | 0.00 | 2,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 0.00 | 0.00 | 2,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 0.00 | 0.00 | 2,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 0.00 | 0.00 | 2,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 0.00 | 0.00 | 3,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 0.00 | 0.00 | 3,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 0.00 | 0.00 | 3,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 0.00 | 0.00 | 3,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 0.00 | 0.00 | 3,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 0.00 | 0.00 | 3,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 0.00 | 0.00 | 3,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 0.00 | 0.00 | 3,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 0.00 | 0.00 | 3,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 0.00 | 0.00 | 3,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 0.00 | 0.00 | 4,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 0.00 | 0.00 | 4,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 0.00 | 0.00 | 4,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 0.00 | 0.00 | 4,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 0.00 | 0.00 | 4,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 0.00 | 0.00 | 4,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 0.00 | 0.00 | 4,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 0.00 | 0.00 | 4,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 0.00 | 0.00 | 4,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 0.00 | 0.00 | 4,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 0.00 | 0.00 | 5,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 0.00 | 0.00 | 5,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 0.00 | 0.00 | 5,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 0.00 | 0.00 | 5,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #1H |
| **Company:** | Energen Resources Corporation | **TVD Reference:** | WELL1 @ 3671.5usft |
| **Project:** | Permian Basin(Lea County, NM) | **MD Reference:** | WELL1 @ 3671.5usft |
| **Site:** | Cox Federal 35 | **North Reference:** | Grid |
| **Well:** | #1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,400.0 | 0.00 | 0.00 | 5,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 0.00 | 0.00 | 5,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 0.00 | 0.00 | 5,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 0.00 | 0.00 | 5,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 0.00 | 0.00 | 5,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 0.00 | 0.00 | 5,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 0.00 | 0.00 | 6,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 0.00 | 0.00 | 6,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 6,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 0.00 | 0.00 | 6,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 6,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 0.00 | 0.00 | 6,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 0.00 | 0.00 | 6,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 0.00 | 0.00 | 6,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 7,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 0.00 | 0.00 | 7,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 7,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 0.00 | 0.00 | 7,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 7,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 0.00 | 0.00 | 7,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 0.00 | 0.00 | 7,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 0.00 | 0.00 | 7,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 0.00 | 0.00 | 7,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 7,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 0.00 | 0.00 | 8,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 0.00 | 0.00 | 8,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 0.00 | 0.00 | 8,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 0.00 | 0.00 | 8,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 0.00 | 0.00 | 8,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 0.00 | 0.00 | 8,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 0.00 | 0.00 | 8,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 0.00 | 0.00 | 8,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 0.00 | 0.00 | 8,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 0.00 | 0.00 | 8,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 0.00 | 0.00 | 9,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 0.00 | 0.00 | 9,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 0.00 | 0.00 | 9,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 0.00 | 0.00 | 9,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 0.00 | 0.00 | 9,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 0.00 | 0.00 | 9,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 0.00 | 0.00 | 9,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 0.00 | 0.00 | 9,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 0.00 | 0.00 | 9,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 0.00 | 0.00 | 9,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 0.00 | 0.00 | 10,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 0.00 | 0.00 | 10,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 0.00 | 0.00 | 10,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 0.00 | 0.00 | 10,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 0.00 | 0.00 | 10,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 10,474.5 | 0.00 | 0.00 | 10,474.5 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |

**KOP - 10474.5 MD, 0.00° INC, 0.00° AZI**

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #1H |
| **Company:** | Energen Resources Corporation | **TVD Reference:** | WELL1 @ 3671.5usft |
| **Project:** | Permian Basin(Lea County, NM) | **MD Reference:** | WELL1 @ 3671.5usft |
| **Site:** | Cox Federal 35 | **North Reference:** | Grid |
| **Well:** | #1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 10,500.0 | 3.06 | 359.60 | 10,500.0 | 0.7 | 0.0 | 0.7 | 12.00 | 12.00 | 0.00 |
| 10,525.0 | 6.06 | 359.60 | 10,524.9 | 2.7 | 0.0 | 2.7 | 12.00 | 12.00 | 0.00 |
| 10,550.0 | 9.06 | 359.60 | 10,549.7 | 6.0 | 0.0 | 6.0 | 12.00 | 12.00 | 0.00 |
| 10,575.0 | 12.06 | 359.60 | 10,574.3 | 10.5 | -0.1 | 10.5 | 12.00 | 12.00 | 0.00 |
| 10,600.0 | 15.06 | 359.60 | 10,598.6 | 16.4 | -0.1 | 16.4 | 12.00 | 12.00 | 0.00 |
| 10,625.0 | 18.06 | 359.60 | 10,622.5 | 23.5 | -0.2 | 23.5 | 12.00 | 12.00 | 0.00 |
| 10,650.0 | 21.06 | 359.60 | 10,646.1 | 31.9 | -0.2 | 31.9 | 12.00 | 12.00 | 0.00 |
| 10,675.0 | 24.06 | 359.60 | 10,669.2 | 41.5 | -0.3 | 41.5 | 12.00 | 12.00 | 0.00 |
| 10,700.0 | 27.06 | 359.60 | 10,691.7 | 52.3 | -0.4 | 52.3 | 12.00 | 12.00 | 0.00 |
| 10,725.0 | 30.06 | 359.60 | 10,713.7 | 64.2 | -0.4 | 64.2 | 12.00 | 12.00 | 0.00 |
| 10,750.0 | 33.06 | 359.60 | 10,735.0 | 77.3 | -0.5 | 77.3 | 12.00 | 12.00 | 0.00 |
| 10,775.0 | 36.06 | 359.60 | 10,755.6 | 91.5 | -0.6 | 91.5 | 12.00 | 12.00 | 0.00 |
| 10,800.0 | 39.06 | 359.60 | 10,775.4 | 106.7 | -0.7 | 106.7 | 12.00 | 12.00 | 0.00 |
| 10,825.0 | 42.06 | 359.60 | 10,794.4 | 123.0 | -0.9 | 123.0 | 12.00 | 12.00 | 0.00 |
| 10,850.0 | 45.06 | 359.60 | 10,812.5 | 140.2 | -1.0 | 140.2 | 12.00 | 12.00 | 0.00 |
| 10,875.0 | 48.06 | 359.60 | 10,829.7 | 158.3 | -1.1 | 158.3 | 12.00 | 12.00 | 0.00 |
| 10,900.0 | 51.06 | 359.60 | 10,845.9 | 177.4 | -1.2 | 177.4 | 12.00 | 12.00 | 0.00 |
| 10,925.0 | 54.06 | 359.60 | 10,861.1 | 197.2 | -1.4 | 197.2 | 12.00 | 12.00 | 0.00 |
| 10,950.0 | 57.06 | 359.60 | 10,875.2 | 217.8 | -1.5 | 217.8 | 12.00 | 12.00 | 0.00 |
| 10,975.0 | 60.06 | 359.60 | 10,888.3 | 239.1 | -1.7 | 239.2 | 12.00 | 12.00 | 0.00 |
| 11,000.0 | 63.06 | 359.60 | 10,900.2 | 261.1 | -1.8 | 261.1 | 12.00 | 12.00 | 0.00 |
| 11,025.0 | 66.06 | 359.60 | 10,910.9 | 283.7 | -2.0 | 283.7 | 12.00 | 12.00 | 0.00 |
| 11,050.0 | 69.05 | 359.60 | 10,920.4 | 306.8 | -2.1 | 306.8 | 12.00 | 12.00 | 0.00 |
| 11,075.0 | 72.05 | 359.60 | 10,928.8 | 330.4 | -2.3 | 330.4 | 12.00 | 12.00 | 0.00 |
| 11,100.0 | 75.05 | 359.60 | 10,935.8 | 354.3 | -2.5 | 354.4 | 12.00 | 12.00 | 0.00 |
| 11,125.0 | 78.05 | 359.60 | 10,941.7 | 378.7 | -2.6 | 378.7 | 12.00 | 12.00 | 0.00 |
| 11,150.0 | 81.05 | 359.60 | 10,946.2 | 403.2 | -2.8 | 403.2 | 12.00 | 12.00 | 0.00 |
| 11,175.0 | 84.05 | 359.60 | 10,949.4 | 428.0 | -3.0 | 428.0 | 12.00 | 12.00 | 0.00 |
| 11,200.0 | 87.05 | 359.60 | 10,951.4 | 452.9 | -3.2 | 453.0 | 12.00 | 12.00 | 0.00 |
| 11,224.6 | 90.00 | 359.60 | 10,952.0 | 477.5 | -3.3 | 477.5 | 12.00 | 12.00 | 0.00 |
| **EOC- 11224.6 'MD, 90.00° INC, 359.60° AZI** | | | | | | | | | |
| 11,300.0 | 90.00 | 359.60 | 10,952.0 | 552.9 | -3.9 | 552.9 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.00 | 359.60 | 10,952.0 | 652.9 | -4.6 | 652.9 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.00 | 359.60 | 10,952.0 | 752.9 | -5.3 | 752.9 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.00 | 359.60 | 10,952.0 | 852.9 | -6.0 | 852.9 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.00 | 359.60 | 10,952.0 | 952.9 | -6.7 | 952.9 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.00 | 359.60 | 10,952.0 | 1,052.9 | -7.4 | 1,052.9 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.00 | 359.60 | 10,952.0 | 1,152.9 | -8.0 | 1,152.9 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.00 | 359.60 | 10,952.0 | 1,252.9 | -8.7 | 1,252.9 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.00 | 359.60 | 10,952.0 | 1,352.9 | -9.4 | 1,352.9 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.00 | 359.60 | 10,952.0 | 1,452.9 | -10.1 | 1,452.9 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.00 | 359.60 | 10,952.0 | 1,552.9 | -10.8 | 1,552.9 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.00 | 359.60 | 10,952.0 | 1,652.9 | -11.5 | 1,652.9 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.00 | 359.60 | 10,952.0 | 1,752.9 | -12.2 | 1,752.9 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.00 | 359.60 | 10,952.0 | 1,852.9 | -12.9 | 1,852.9 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 90.00 | 359.60 | 10,952.0 | 1,952.9 | -13.6 | 1,952.9 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.00 | 359.60 | 10,952.0 | 2,052.9 | -14.3 | 2,052.9 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.00 | 359.60 | 10,952.0 | 2,152.9 | -15.0 | 2,152.9 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.00 | 359.60 | 10,952.0 | 2,252.9 | -15.7 | 2,252.9 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.00 | 359.60 | 10,952.0 | 2,352.9 | -16.4 | 2,352.9 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.00 | 359.60 | 10,952.0 | 2,452.9 | -17.1 | 2,452.9 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.00 | 359.60 | 10,952.0 | 2,552.9 | -17.8 | 2,552.9 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.00 | 359.60 | 10,952.0 | 2,652.9 | -18.5 | 2,652.9 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 359.60 | 10,952.0 | 2,752.9 | -19.2 | 2,752.9 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #1H |
| **Company:** | Energen Resources Corporation | **TVD Reference:** | WELL1 @ 3671.5usft |
| **Project:** | Permian Basin(Lea County, NM) | **MD Reference:** | WELL1 @ 3671.5usft |
| **Site:** | Cox Federal 35 | **North Reference:** | Grid |
| **Well:** | #1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 13,600.0 | 90.00 | 359.60 | 10,952.0 | 2,852.9 | -19.9 | 2,852.9 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 90.00 | 359.60 | 10,952.0 | 2,952.9 | -20.6 | 2,952.9 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 90.00 | 359.60 | 10,952.0 | 3,052.9 | -21.3 | 3,052.9 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 90.00 | 359.60 | 10,952.0 | 3,152.9 | -22.0 | 3,152.9 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 90.00 | 359.60 | 10,952.0 | 3,252.9 | -22.7 | 3,252.9 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 90.00 | 359.60 | 10,952.0 | 3,352.9 | -23.4 | 3,352.9 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 90.00 | 359.60 | 10,952.0 | 3,452.9 | -24.1 | 3,452.9 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 90.00 | 359.60 | 10,952.0 | 3,552.9 | -24.8 | 3,552.9 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 90.00 | 359.60 | 10,952.0 | 3,652.9 | -25.5 | 3,652.9 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 90.00 | 359.60 | 10,952.0 | 3,752.9 | -26.2 | 3,752.9 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 90.00 | 359.60 | 10,952.0 | 3,852.9 | -26.9 | 3,852.9 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 90.00 | 359.60 | 10,952.0 | 3,952.8 | -27.6 | 3,952.9 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 90.00 | 359.60 | 10,952.0 | 4,052.8 | -28.3 | 4,052.9 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 90.00 | 359.60 | 10,952.0 | 4,152.8 | -29.0 | 4,152.9 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 90.00 | 359.60 | 10,952.0 | 4,252.8 | -29.7 | 4,252.9 | 0.00 | 0.00 | 0.00 |
| 15,100.0 | 90.00 | 359.60 | 10,952.0 | 4,352.8 | -30.4 | 4,352.9 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 90.00 | 359.60 | 10,952.0 | 4,452.8 | -31.1 | 4,452.9 | 0.00 | 0.00 | 0.00 |
| 15,300.0 | 90.00 | 359.60 | 10,952.0 | 4,552.8 | -31.8 | 4,552.9 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 90.00 | 359.60 | 10,952.0 | 4,652.8 | -32.5 | 4,652.9 | 0.00 | 0.00 | 0.00 |
| 15,499.9 | 90.00 | 359.60 | 10,952.0 | 4,752.8 | -33.2 | 4,752.9 | 0.00 | 0.00 | 0.00 |
| TD at 15499.9 - PBHL(CF#2H) | | | | | | | | | |

**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(CF#2H) | 0.00 | 0.00 | 10,952.0 | 4,752.8 | -33.3 | 461,754.76 | 756,204.85 | 32° 16' 3.092 N | 103° 38' 17.403 W |
| - plan misses target center by 0.1usft at 15499.9usft MD (10952.0 TVD, 4752.8 N, -33.2 E) | | | | | | | | | |
| - Point | | | | | | | | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 10,474.5 | 10,474.5 | 0.0 | 0.0 | KOP - 10474.5 'MD, 0.00° INC, 0.00° AZI |
| 11,224.6 | 10,952.0 | 477.5 | -3.3 | EOC- 11224.6 'MD, 90.00° INC, 359.60° AZI |
| 15,499.9 | 10,952.0 | 4,752.8 | -33.2 | TD at 15499.9 |