

ATS-12-1156

HOBBS OCD  
Form 3160-3  
(March 2012)  
FEB 05 2013

## SECRETARY'S POTASH

OCD Hobbs

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

RECEIVED

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. BHL: NM-123520 SHL: NM-84810	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, L. P.		7. If Unit or CA Agreement, Name and No.	
3a. Address 333 W. SHERIDAN OKLAHOMA CITY, OK. 73102		8. Lease Name and Well No. <u>396987</u> AZURITE 22 FED COM 2H	
3b. Phone No. (include area code) (405) 552-4524		9. API Well No. <u>30-025-40983</u>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 330 FNL & 1980 FEL At proposed prod. zone 330 FSL & 1980 FEL		10. Field and Pool, or Exploratory <u>Tonto</u> UNDESIGNATED BONE SPRING <u>594762</u>	
11. Sec., T. R. M. or Blk. and Survey or Area SECTION 22, T. 19 S., R. 33 E.		12. County or Parish LEA	
13. State NM		14. Distance in miles and direction from nearest town or post office* 15 MILES SOUTHEAST OF MALJAMAR, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 120	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. BHL - 1218' SHL - 1324'	19. Proposed Depth MD: 13,631' TVD: 9200'	20. BLM/BIA Bond No. on file NMB-000801 CO-1104	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3655' GL	22. Approximate date work will start*	23. Estimated duration 30 Days	

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature <u>Barry W. Hunt</u>	Name (Printed/Typed) BARRY W. HUNT	Date 8/24/12
Title PERMIT AGENT FOR DEVON ENERGY PRODUCTION COMPANY, L. P.		
Approved by (Signature) /s/ ADEN L. SEIDLITZ	Name (Printed/Typed) ADEN L. SEIDLITZ	Date JAN 25 2013
Title ACTING STATE DIRECTOR	Office NM STATE OFFICE	

Application approval 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.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

\*(Instructions on page 2)

Capitan Controlled Water Basin

Ka  
02/06/13

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

FEB 07 2013

**Azurite 22 Fed Com 2H Drilling Plan**

**1. Pressure Control Equipment**

BOP DESIGN: The BOP system used to drill the intermediate and production holes will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the prior casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

**2. Casing and Cementing Plan Summary**

The surface fresh water sands will be protected by setting 13.375" casing at 1,500' and circulating cement back to surface. ~~The~~ fresh water sands will be protected by setting 9.625" casing at 5,000' and circulating cement to surface. The Delaware intervals will be isolated by setting 5-1/2" casing to total depth of 13,631' and circulating cement to the surface. All casing is new and API approved.

**3. Casing Program:**

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight	Collar	Grade
17.5"	0 - 1,500'	13.375"	0 - 1,500'	54.5#	BTC	J-55
12.25"	1,500' - 5,000'	9.625"	0 - 5,000'	40#	BTC	HCK-55
8.75"	5,000' - 8,600'	5.5"	0 - 8,600'	17#	LTC	P-110HC
8.75"	8,600' - 13,631'	5.5"	8,600' - 13,631'	17#	BTC	P-110HC

**4. Design Factors:**

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13.375"	1.61	3.89	11.85
9.625"	1.64	1.52	4.63
5.5" LTC	2.10	2.61	1.92
5.5" BTC	1.99	2.47	6.79

Drilling Program / Surface Use Plan  
Discipline-Specific Input Form

**5. Cement Program:**

**Cementing Program (cement volumes based on at least 25% excess)**

13-3/8" Surface      **Lead:** 955 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water, 13.5 ppg  
  
                         **Yield:** 1.75 cf/sk  
  
                         **TOC @ surface**  
  
                         **Tail:** 335 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg  
  
                         **Yield:** 1.35 cf/sk

9-5/8" Intermediate      **Lead:** 1035 sacks (65:35) Class C Cement:Poz (Fly Ash); + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.9 ppg  
  
                         **Yield:** 1.85 cf/sk  
  
                         **TOC @ surface**  
  
                         **Tail:** 425 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg  
  
                         **Yield:** 1.33 cf/sk

5-1/2" Production      **1<sup>st</sup> Lead:** 315 sacks (50:50) Class H Cement:Poz (Fly Ash) + 10% bwoc Bentonite + 8 lb/sk Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 0.3% bwoc HR-601 + 0.3% bwoc Econolite + 77.2% Fresh Water, 11.8 ppg  
  
                         **Yield:** 2.52 cf/sk  
  
                         **2<sup>nd</sup> Lead:** 390 sacks (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.125 lbs/sack Poly-E-Flake + 0.1% bwoc HR-601 + 74.1% Fresh Water, 12.5 ppg  
  
                         **Yield:** 1.95 cf/sk  
  
                         **Tail:** 1280 sacks (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg  
  
                         **Yield:** 1.22 cf/sk

TOC for All Strings:

Surface:	0
Intermediate:	0
Production:	0

**ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.**

Drilling Program / Surface Use Plan  
Discipline-Specific Input Form

6. **Proposed Mud Circulation System:**

Depth Range	Mud Weight	Viscosity	Fluid Loss	Type System
0 - 1,500'	8.4-9.0	28-34	NC	Fresh Water
1,500' - 5,000'	9.8-10.2	28-32	NC	Brine
5,000' - 13,631'	8.6-9.0	28-32	NC-12	Fresh Water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. **LOGGING, CORING, AND TESTING PROGRAM:** *See COA*

- Drill stem tests will be based on geological sample shows.
- If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
- The open hole electrical logging program will be:
  - Total depth to intermediate casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron - Z Density log with Gamma Ray and Caliper.
  - Total Depth to Surface Compensated Neutron with Gamma Ray.
  - No coring program is planned.
  - Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

8. **Auxiliary Well Control and Monitoring Equipment:**

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13.375" casing shoe until the 5.5" casing is cemented. Breathing equipment will be on location upon drilling the 13.375" shoe until total depth is reached.

9. **Potential Hazards:**

No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP of 4,002 psi and estimated BHT 175°. No H2S is anticipated to be encountered.

10. **Anticipated Starting Date and Duration of Operations:**

- Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as a rig becomes available following BLM approval. Move in operations and drilling is expected to take 32 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.



PROJECT DETAILS: Lea County (NAD83)  
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



Azimuths to Grid North  
True North: -0.37°  
Magnetic North: 7.15°

Magnetic Field  
Strength: 48751.6snT  
Dip Angle: 60.54°  
Date: 7/30/2012  
Model: IGRF2010

Project: Lea County (NAD83)  
Site: Azurite 22 Fed  
Well: #2H  
Wellbore: OH  
Plan: Plan #1 (#2H/OH)

#### WELL DETAILS: #2H

Ground Elevation: 3655.0  
RKB Elevation: KB + 19 @ 3674.0usft (McVay 8)  
Rig Name: McVay 8

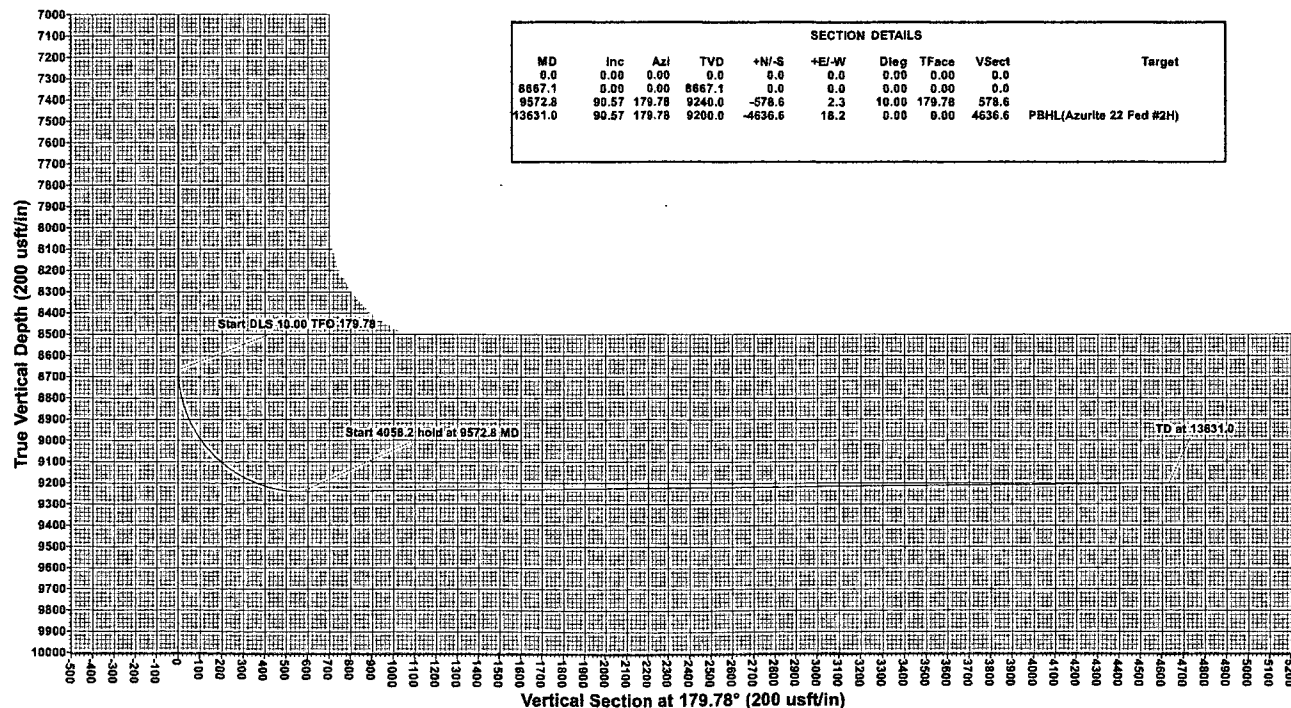
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	601635.100	752024.400	32.652	-103.649	

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

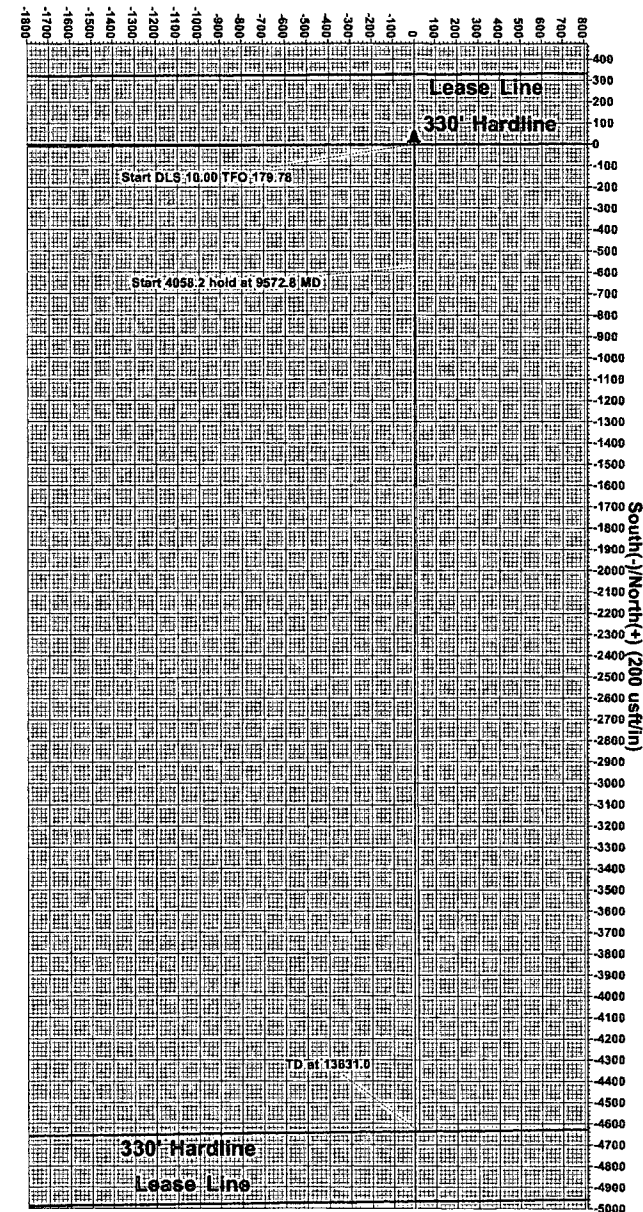
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(Azurite 22 Fed #2H)	9200.0	-4636.6	16.2	596998.500	752042.600	Point

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Deg	TFace	VSecl	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
8667.1	0.00	0.00	8667.1	0.0	0.0	0.00	0.00	0.0	
9572.8	90.57	179.78	9240.0	-578.6	2.3	10.00	179.78	578.6	
13631.0	90.57	179.78	9200.0	-4636.6	16.2	0.00	0.00	4636.6	PBHL(Azurite 22 Fed #2H)



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West(-)/East(+) (200 usft/in)



Plan: Plan #1 (#2H/OH)

Created By: Sam Bittle Date: 14:27, July 30 2012

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Drawn Using:   
Lea County, NM   
Azurite 22 Fed   
Well #2H   
Plan #1



## **Devon Energy, Inc.**

**Lea County (NAD83)**

**Azurite 22 Fed**

**#2H**

**OH**

**Plan: Plan #1**

## **PathfinderX & Y Report**

**30 July, 2012**

**HOBBS OCD**

**FEB 05 2013**

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Pathfinder  
PathfinderX & Y Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Devon Energy, Inc.	<b>Local Co-ordinate Reference:</b>	Well #2H
<b>Project:</b>	Lea County (NAD83)	<b>TVD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Site:</b>	Azurite 22 Fed	<b>MD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Well:</b>	#2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Lea County (NAD83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site:</b>	Azurite 22 Fed		
<b>Site Position:</b>		<b>Northing:</b>	601,635.100 usft
<b>From:</b>	Map	<b>Easting:</b>	752,024.400 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32.652
		<b>Longitude:</b>	-103.649
		<b>Grid Convergence:</b>	0.37 °

Well	#2H					
Well Position	+N/-S	0.0 usft	Northing:	601,635.100 usft	Latitude:	32.652
	+E/-W	0.0 usft	Easting:	752,024.400 usft	Longitude:	-103.649
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,655.0 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/30/2012	7.52	60.54	48,752

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	179.78

<b>Survey Tool Program</b>	<b>Date</b>	7/30/2012		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	13,630.9	Plan #1 (OH)	Pathfinder	Pathfinder MWD



Pathfinder  
PathfinderX & Y Report

**PATHFINDER**  
A Schlumberger Company

<b>Company:</b>	Devon Energy, Inc.	<b>Local Co-ordinate Reference:</b>	Well #2H
<b>Project:</b>	Lea County (NAD83)	<b>TVD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Site:</b>	Azurite 22 Fed	<b>MD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Well:</b>	#2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,674.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
20.0	0.00	0.00	20.0	-3,654.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
<b>QUATERNARY</b>											
100.0	0.00	0.00	100.0	-3,574.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
200.0	0.00	0.00	200.0	-3,474.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
300.0	0.00	0.00	300.0	-3,374.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
400.0	0.00	0.00	400.0	-3,274.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
500.0	0.00	0.00	500.0	-3,174.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
600.0	0.00	0.00	600.0	-3,074.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
700.0	0.00	0.00	700.0	-2,974.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
800.0	0.00	0.00	800.0	-2,874.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
900.0	0.00	0.00	900.0	-2,774.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,000.0	0.00	0.00	1,000.0	-2,674.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,100.0	0.00	0.00	1,100.0	-2,574.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,200.0	0.00	0.00	1,200.0	-2,474.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,300.0	0.00	0.00	1,300.0	-2,374.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,400.0	0.00	0.00	1,400.0	-2,274.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,410.0	0.00	0.00	1,410.0	-2,264.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
<b>RUSTLER DOL.</b>											
1,500.0	0.00	0.00	1,500.0	-2,174.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,600.0	0.00	0.00	1,600.0	-2,074.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,700.0	0.00	0.00	1,700.0	-1,974.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,800.0	0.00	0.00	1,800.0	-1,874.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1,900.0	0.00	0.00	1,900.0	-1,774.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
2,000.0	0.00	0.00	2,000.0	-1,674.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
2,100.0	0.00	0.00	2,100.0	-1,574.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
2,200.0	0.00	0.00	2,200.0	-1,474.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	





**Pathfinder**  
PathfinderX & Y Report



A Schlumberger Company

**Company:** Devon Energy, Inc.  
**Project:** Lea County (NAD83)  
**Site:** Azurite 22 Fed  
**Well:** #2H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #2H  
**TVD Reference:** KB = 19 @ 3674.0usft (McVay 8)  
**MD Reference:** KB = 19 @ 3674.0usft (McVay 8)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

**Planned Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,300.0	0.00	0.00	2,300.0	-1,374.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,400.0	0.00	0.00	2,400.0	-1,274.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,500.0	0.00	0.00	2,500.0	-1,174.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,600.0	0.00	0.00	2,600.0	-1,074.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,700.0	0.00	0.00	2,700.0	-974.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,800.0	0.00	0.00	2,800.0	-874.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
2,900.0	0.00	0.00	2,900.0	-774.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,000.0	0.00	0.00	3,000.0	-674.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,100.0	0.00	0.00	3,100.0	-574.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
<b>BASE SALADO SALT</b>										
3,200.0	0.00	0.00	3,200.0	-474.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,270.0	0.00	0.00	3,270.0	-404.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
<b>YATES SS</b>										
3,300.0	0.00	0.00	3,300.0	-374.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,400.0	0.00	0.00	3,400.0	-274.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,500.0	0.00	0.00	3,500.0	-174.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,510.0	0.00	0.00	3,510.0	-164.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
<b>SEVEN RIVERS</b>										
3,600.0	0.00	0.00	3,600.0	-74.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,700.0	0.00	0.00	3,700.0	26.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,800.0	0.00	0.00	3,800.0	126.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
3,900.0	0.00	0.00	3,900.0	226.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
4,000.0	0.00	0.00	4,000.0	326.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
4,100.0	0.00	0.00	4,100.0	426.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
4,200.0	0.00	0.00	4,200.0	526.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
4,265.0	0.00	0.00	4,265.0	591.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40
<b>QUEEN SS.</b>										
4,300.0	0.00	0.00	4,300.0	626.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40



**Pathfinder**  
PathfinderX & Y Report



<b>Company:</b>	Devon Energy, Inc.	<b>Local Co-ordinate Reference:</b>	Well #2H
<b>Project:</b>	Lea County (NAD83)	<b>TVD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Site:</b>	Azurite 22 Fed	<b>MD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Well:</b>	#2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,400.0	0.00	0.00	4,400.0	726.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
4,500.0	0.00	0.00	4,500.0	826.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
4,600.0	0.00	0.00	4,600.0	926.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
4,700.0	0.00	0.00	4,700.0	1,026.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
4,720.0	0.00	0.00	4,720.0	1,046.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
GRAYBURG											
4,800.0	0.00	0.00	4,800.0	1,126.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
4,900.0	0.00	0.00	4,900.0	1,226.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,000.0	0.00	0.00	5,000.0	1,326.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,100.0	0.00	0.00	5,100.0	1,426.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,200.0	0.00	0.00	5,200.0	1,526.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,300.0	0.00	0.00	5,300.0	1,626.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,400.0	0.00	0.00	5,400.0	1,726.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,500.0	0.00	0.00	5,500.0	1,826.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,600.0	0.00	0.00	5,600.0	1,926.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,700.0	0.00	0.00	5,700.0	2,026.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,800.0	0.00	0.00	5,800.0	2,126.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
5,900.0	0.00	0.00	5,900.0	2,226.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,000.0	0.00	0.00	6,000.0	2,326.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,080.0	0.00	0.00	6,080.0	2,406.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
CHERRY CANYON											
6,100.0	0.00	0.00	6,100.0	2,426.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,200.0	0.00	0.00	6,200.0	2,526.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,300.0	0.00	0.00	6,300.0	2,626.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,400.0	0.00	0.00	6,400.0	2,726.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,500.0	0.00	0.00	6,500.0	2,826.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,600.0	0.00	0.00	6,600.0	2,926.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	



Pathfinder  
PathfinderX & Y Report



Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Site:	Azurite 22 Fed	MD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
6,700.0	0.00	0.00	6,700.0	3,026.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,800.0	0.00	0.00	6,800.0	3,126.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
6,900.0	0.00	0.00	6,900.0	3,226.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,000.0	0.00	0.00	7,000.0	3,326.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,100.0	0.00	0.00	7,100.0	3,426.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,200.0	0.00	0.00	7,200.0	3,526.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,300.0	0.00	0.00	7,300.0	3,626.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,400.0	0.00	0.00	7,400.0	3,726.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,500.0	0.00	0.00	7,500.0	3,826.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
BRYSHY CANYON											
7,600.0	0.00	0.00	7,600.0	3,926.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,700.0	0.00	0.00	7,700.0	4,026.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,800.0	0.00	0.00	7,800.0	4,126.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,900.0	0.00	0.00	7,900.0	4,226.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
7,910.0	0.00	0.00	7,910.0	4,236.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
1ST BONE SPRING LM.											
8,000.0	0.00	0.00	8,000.0	4,326.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,100.0	0.00	0.00	8,100.0	4,426.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,200.0	0.00	0.00	8,200.0	4,526.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,300.0	0.00	0.00	8,300.0	4,626.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,400.0	0.00	0.00	8,400.0	4,726.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,500.0	0.00	0.00	8,500.0	4,826.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,600.0	0.00	0.00	8,600.0	4,926.0	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,667.1	0.00	0.00	8,667.1	4,993.1	0.0	0.0	0.0	0.00	601,635.10	752,024.40	
8,700.0	3.29	179.78	8,700.0	5,026.0	-0.9	0.0	0.9	10.00	601,634.16	752,024.40	
8,750.0	8.29	179.78	8,749.7	5,075.7	-6.0	0.0	6.0	10.00	601,629.11	752,024.42	
8,800.0	13.29	179.78	8,798.8	5,124.8	-15.3	0.1	15.3	10.00	601,619.76	752,024.46	



Pathfinder  
PathfinderX & Y Report



Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Site:	Azurite 22 Fed	MD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,850.0	18.29	179.78	8,846.9	5,172.9	-28.9	0.1	28.9	10.00	601,606.15	752,024.51	
8,900.0	23.29	179.78	8,893.6	5,219.6	-46.7	0.2	46.7	10.00	601,588.41	752,024.58	
8,950.0	28.29	179.78	8,938.6	5,264.6	-68.4	0.3	68.4	10.00	601,566.67	752,024.67	
9,000.0	33.29	179.78	8,981.6	5,307.6	-94.0	0.4	94.0	10.00	601,541.08	752,024.77	
9,050.0	38.29	179.78	9,022.1	5,348.1	-123.3	0.5	123.3	10.00	601,511.85	752,024.88	
9,100.0	43.29	179.78	9,060.0	5,386.0	-155.9	0.6	155.9	10.00	601,479.20	752,025.01	
9,150.0	48.29	179.78	9,094.8	5,420.8	-191.7	0.8	191.7	10.00	601,443.37	752,025.15	
9,200.0	53.29	179.78	9,126.4	5,452.4	-230.5	0.9	230.5	10.00	601,404.64	752,025.30	
9,250.0	58.29	179.78	9,154.5	5,480.5	-271.8	1.1	271.8	10.00	601,363.30	752,025.47	
9,260.6	59.35	179.78	9,160.0	5,486.0	-280.8	1.1	280.8	10.00	601,354.26	752,025.50	
1ST BONE SPRING SS.											
9,300.0	63.29	179.78	9,178.9	5,504.9	-315.4	1.2	315.4	10.00	601,319.67	752,025.64	
9,350.0	68.29	179.78	9,199.4	5,525.4	-361.0	1.4	361.0	10.00	601,274.09	752,025.82	
9,400.0	73.29	179.78	9,215.9	5,541.9	-408.2	1.6	408.2	10.00	601,226.89	752,026.00	
9,450.0	78.29	179.78	9,228.1	5,554.1	-456.7	1.8	456.7	10.00	601,178.43	752,026.19	
9,500.0	83.29	179.78	9,236.1	5,562.1	-506.0	2.0	506.0	10.00	601,129.09	752,026.39	
9,550.0	88.29	179.78	9,239.8	5,565.8	-555.9	2.2	555.9	10.00	601,079.24	752,026.58	
9,572.8	90.57	179.78	9,240.0	5,566.0	-578.6	2.3	578.6	10.00	601,056.50	752,026.67	
9,600.0	90.57	179.78	9,239.8	5,565.8	-605.9	2.4	605.9	0.00	601,029.25	752,026.78	
9,700.0	90.57	179.78	9,238.8	5,564.8	-705.8	2.8	705.9	0.00	600,929.25	752,027.17	
9,800.0	90.57	179.78	9,237.8	5,563.8	-805.8	3.2	805.8	0.00	600,829.26	752,027.56	
9,900.0	90.57	179.78	9,236.8	5,562.8	-905.8	3.6	905.8	0.00	600,729.27	752,027.96	
10,000.0	90.57	179.78	9,235.8	5,561.8	-1,005.8	3.9	1,005.8	0.00	600,629.27	752,028.35	
10,100.0	90.57	179.78	9,234.8	5,560.8	-1,105.8	4.3	1,105.8	0.00	600,529.28	752,028.74	
10,200.0	90.57	179.78	9,233.8	5,559.8	-1,205.8	4.7	1,205.8	0.00	600,429.28	752,029.13	
10,300.0	90.57	179.78	9,232.9	5,558.9	-1,305.8	5.1	1,305.8	0.00	600,329.29	752,029.53	
10,400.0	90.57	179.78	9,231.9	5,557.9	-1,405.8	5.5	1,405.8	0.00	600,229.29	752,029.92	



**Pathfinder**  
PathfinderX & Y Report



<b>Company:</b>	Devon Energy, Inc.	<b>Local Co-ordinate Reference:</b>	Well #2H
<b>Project:</b>	Lea County (NAD83)	<b>TVD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Site:</b>	Azurite 22 Fed	<b>MD Reference:</b>	KB = 19 @ 3674.0usft (McVay 8)
<b>Well:</b>	#2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	EDM 5000.1 Single User Db

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,500.0	90.57	179.78	9,230.9	5,556.9	-1,505.8	5.9	1,505.8	0.00	600,129.30	752,030.31
10,600.0	90.57	179.78	9,229.9	5,555.9	-1,605.8	6.3	1,605.8	0.00	600,029.30	752,030.70
10,700.0	90.57	179.78	9,228.9	5,554.9	-1,705.8	6.7	1,705.8	0.00	599,929.31	752,031.10
10,800.0	90.57	179.78	9,227.9	5,553.9	-1,805.8	7.1	1,805.8	0.00	599,829.32	752,031.49
10,900.0	90.57	179.78	9,226.9	5,552.9	-1,905.8	7.5	1,905.8	0.00	599,729.32	752,031.88
11,000.0	90.57	179.78	9,226.0	5,552.0	-2,005.8	7.9	2,005.8	0.00	599,629.33	752,032.27
11,100.0	90.57	179.78	9,225.0	5,551.0	-2,105.8	8.3	2,105.8	0.00	599,529.33	752,032.67
11,200.0	90.57	179.78	9,224.0	5,550.0	-2,205.8	8.7	2,205.8	0.00	599,429.34	752,033.06
11,300.0	90.57	179.78	9,223.0	5,549.0	-2,305.8	9.1	2,305.8	0.00	599,329.34	752,033.45
11,400.0	90.57	179.78	9,222.0	5,548.0	-2,405.8	9.4	2,405.8	0.00	599,229.35	752,033.84
11,500.0	90.57	179.78	9,221.0	5,547.0	-2,505.7	9.8	2,505.8	0.00	599,129.36	752,034.24
11,600.0	90.57	179.78	9,220.0	5,546.0	-2,605.7	10.2	2,605.8	0.00	599,029.36	752,034.63
11,700.0	90.57	179.78	9,219.0	5,545.0	-2,705.7	10.6	2,705.8	0.00	598,929.37	752,035.02
11,800.0	90.57	179.78	9,218.1	5,544.1	-2,805.7	11.0	2,805.7	0.00	598,829.37	752,035.41
11,900.0	90.57	179.78	9,217.1	5,543.1	-2,905.7	11.4	2,905.7	0.00	598,729.38	752,035.81
12,000.0	90.57	179.78	9,216.1	5,542.1	-3,005.7	11.8	3,005.7	0.00	598,629.38	752,036.20
12,100.0	90.57	179.78	9,215.1	5,541.1	-3,105.7	12.2	3,105.7	0.00	598,529.39	752,036.59
12,200.0	90.57	179.78	9,214.1	5,540.1	-3,205.7	12.6	3,205.7	0.00	598,429.39	752,036.98
12,300.0	90.57	179.78	9,213.1	5,539.1	-3,305.7	13.0	3,305.7	0.00	598,329.40	752,037.38
12,400.0	90.57	179.78	9,212.1	5,538.1	-3,405.7	13.4	3,405.7	0.00	598,229.41	752,037.77
12,500.0	90.57	179.78	9,211.2	5,537.2	-3,505.7	13.8	3,505.7	0.00	598,129.41	752,038.16
12,600.0	90.57	179.78	9,210.2	5,536.2	-3,605.7	14.2	3,605.7	0.00	598,029.42	752,038.55
12,700.0	90.57	179.78	9,209.2	5,535.2	-3,705.7	14.5	3,705.7	0.00	597,929.42	752,038.95
12,800.0	90.57	179.78	9,208.2	5,534.2	-3,805.7	14.9	3,805.7	0.00	597,829.43	752,039.34
12,900.0	90.57	179.78	9,207.2	5,533.2	-3,905.7	15.3	3,905.7	0.00	597,729.43	752,039.73
13,000.0	90.57	179.78	9,206.2	5,532.2	-4,005.7	15.7	4,005.7	0.00	597,629.44	752,040.12
13,100.0	90.57	179.78	9,205.2	5,531.2	-4,105.7	16.1	4,105.7	0.00	597,529.45	752,040.52



Pathfinder  
PathfinderX & Y Report



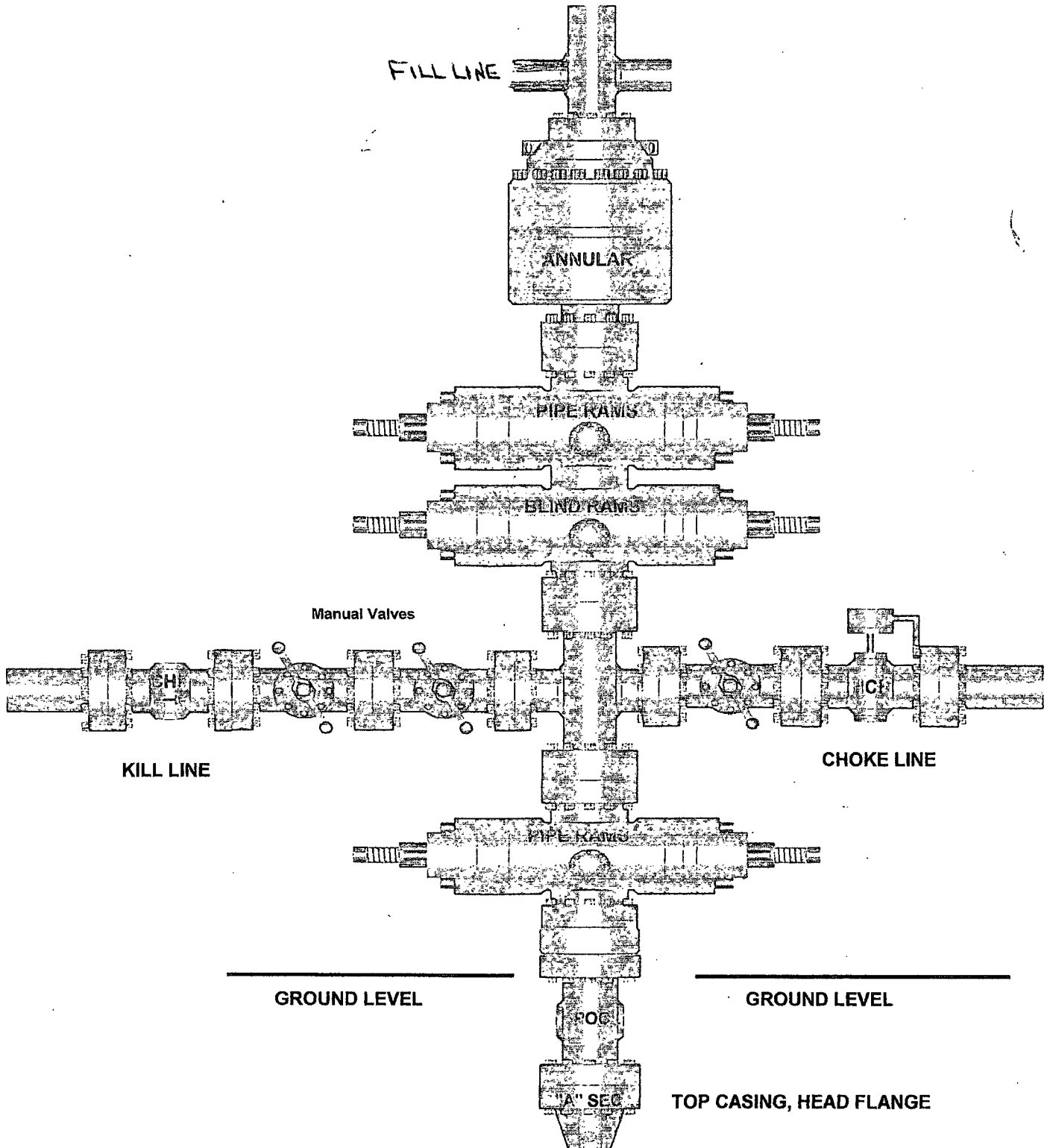
Company:	Devon Energy, Inc.	Local Co-ordinate Reference:	Well #2H
Project:	Lea County (NAD83)	TVD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Site:	Azurite 22 Fed	MD Reference:	KB = 19 @ 3674.0usft (McVay 8)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
13,200.0	90.57	179.78	9,204.3	5,530.3	-4,205.6	16.5	4,205.7	0.00	597,429.45	752,040.91	
13,300.0	90.57	179.78	9,203.3	5,529.3	-4,305.6	16.9	4,305.7	0.00	597,329.46	752,041.30	
13,400.0	90.57	179.78	9,202.3	5,528.3	-4,405.6	17.3	4,405.7	0.00	597,229.46	752,041.69	
13,500.0	90.57	179.78	9,201.3	5,527.3	-4,505.6	17.7	4,505.7	0.00	597,129.47	752,042.09	
13,600.0	90.57	179.78	9,200.3	5,526.3	-4,605.6	18.1	4,605.7	0.00	597,029.47	752,042.48	
13,631.0	90.57	179.78	9,200.0	5,526.0	-4,636.6	18.2	4,636.6	0.00	596,998.50	752,042.60	
PBHL(Azurite 22 Fed #2H)											

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
9,260.6	9,160.0	1ST BONE SPRING SS.				
1,410.0	1,410.0	RUSTLER DOL.				
7,910.0	7,910.0	1ST BONE SPRING LM.				
3,510.0	3,510.0	SEVEN RIVERS				
7,500.0	7,500.0	BRYSHY CANYON				
6,080.0	6,080.0	CHERRY CANYON				
4,720.0	4,720.0	GRAYBURG				
20.0	20.0	QUATERNARY				
4,265.0	4,265.0	QUEEN SS.				
3,270.0	3,270.0	YATES SS				
3,100.0	3,100.0	BASE SALADO SALT				

Checked By: _____	Approved By: _____	Date: _____
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# 13-5/8" x 3,000 psi BOP Stack



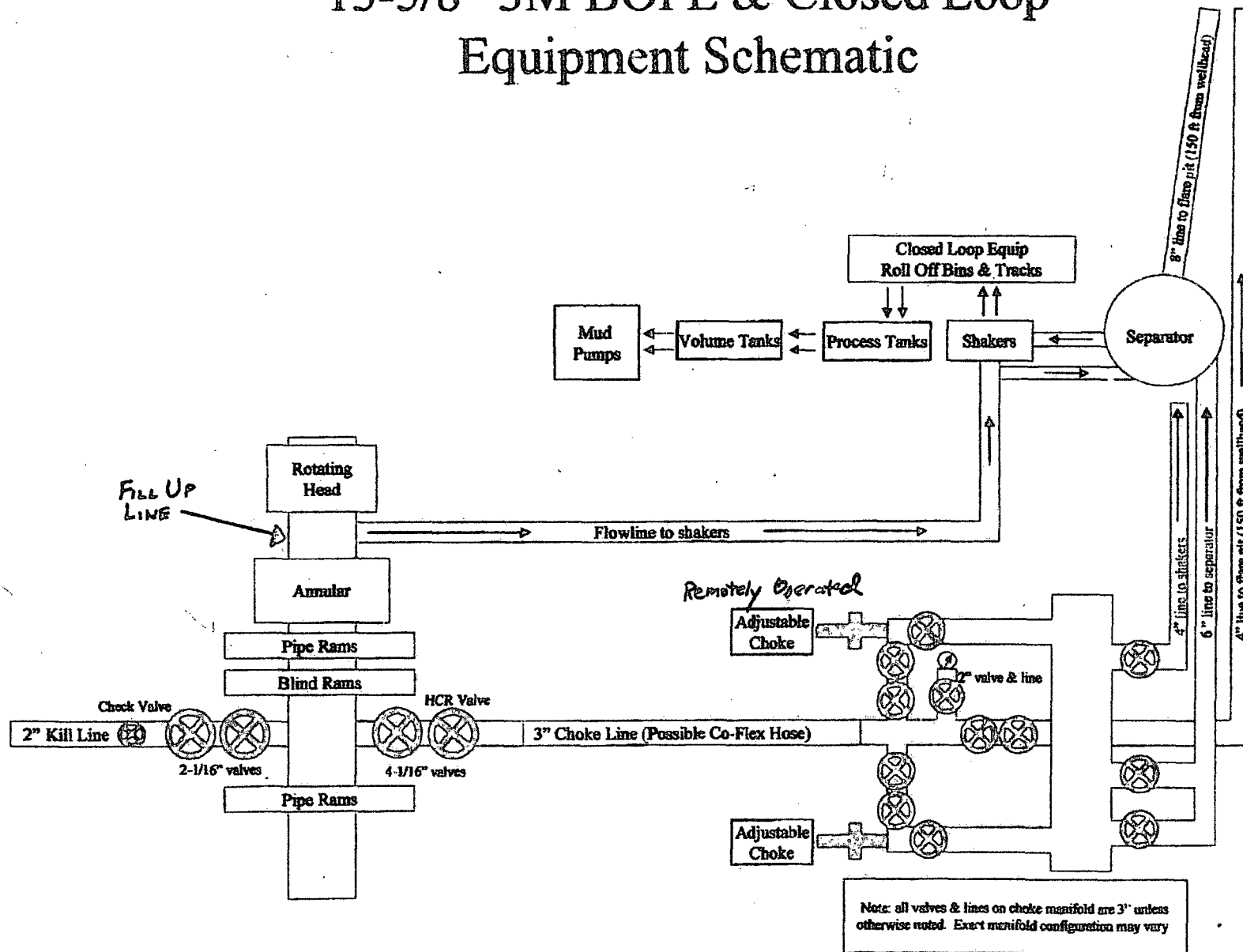
Attachment to Exhibit #1  
NOTES REGARDING BLOWOUT PREVENTERS  
Devon Energy Production Company, LP  
**Azurite 22 Fed 2H**

Surface Location: 330' FNL and 1980' FEL, UL B, Section 22, 19S, 33E, Lea, NM  
Bottom Hole Location: 330' FSL and 1980' FEL, UL O, Section 22, 19S, 33E, Lea, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 5000 psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.



# 13-5/8" 3M BOPE & Closed Loop Equipment Schematic

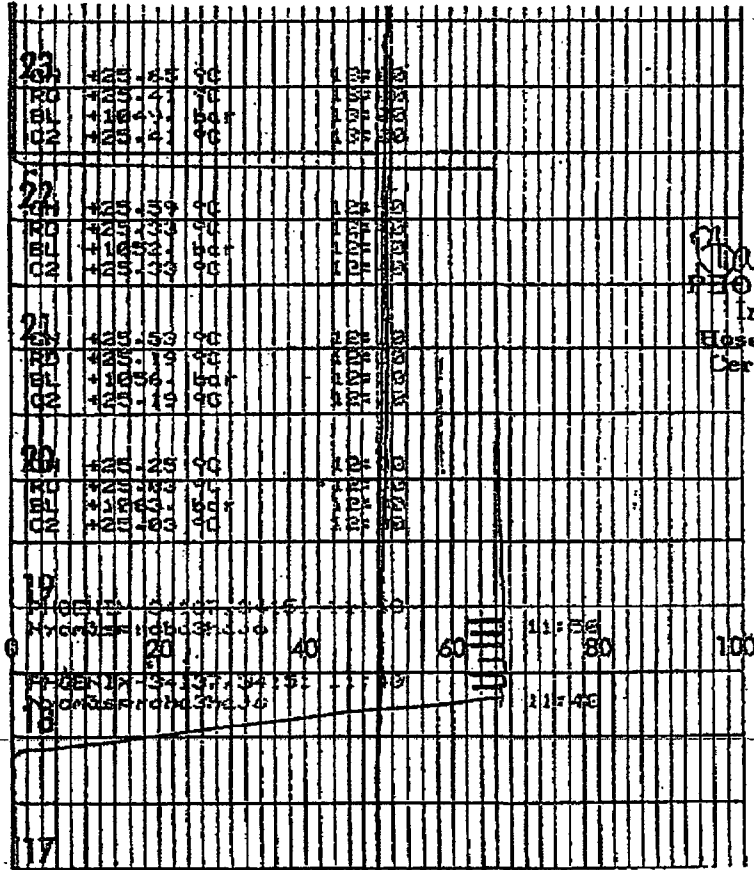



**PHOENIX RUBBER  
INDUSTRIAL LTD.**
**QUALITY DOCUMENT**

H-6728 Szeged, Budapest út 10. Hungary • H-6701 Szeged, P. O. Box 152  
Phone: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H-1082 Budapest, Ráday ut. 42-44. Hungary • H-1440 Budapest, P. O. Box 26  
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemarg2.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 555	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 34137		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature  <div style="text-align: center;">See attachment. (1 page)</div>					
↑ 10 mm = 10 Min. → 10 mm = 16 MPa					
COUPLINGS					
Type	Serial N°	Quality	Heat N°		
3" coupling with 4 1/16" Flange end	714 715	AISI 4130	C7626		
		AISI 4130	47357		
API Spec 16 C Temperature rate: "B"					
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
Date: 30. April. 2002.		Inspector		Quality Control <b>PHOENIX RUBBER</b> Industrial Ltd. Hose Inspection and Pressure Testing Department	



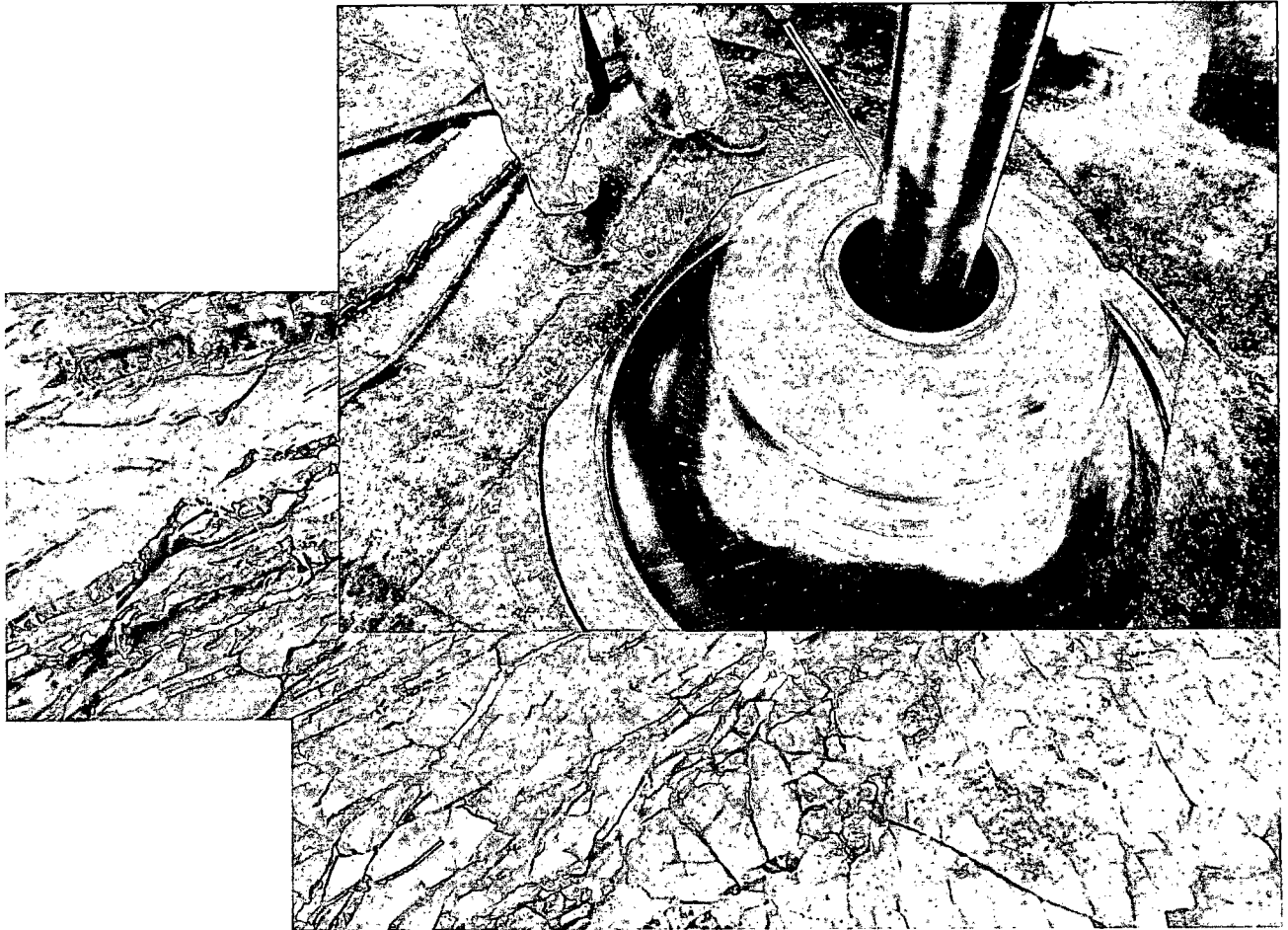
*[Signature]*  
**PHOENIX RUBBER**  
 Industrial Ltd.  
 Hose Inspection and  
 Certification Dept.

VERIFIED TRUE COPY  
 PHOENIX RUBBER G.S.

*U.S.*



Commitment Runs Deep



Design Plan  
Operation and Maintenance Plan  
Closure Plan

SENM - Closed Loop Systems  
June 2012

## **I. Design Plan**

Devon uses various high efficient closed loop systems (CLS). The CLS shown is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

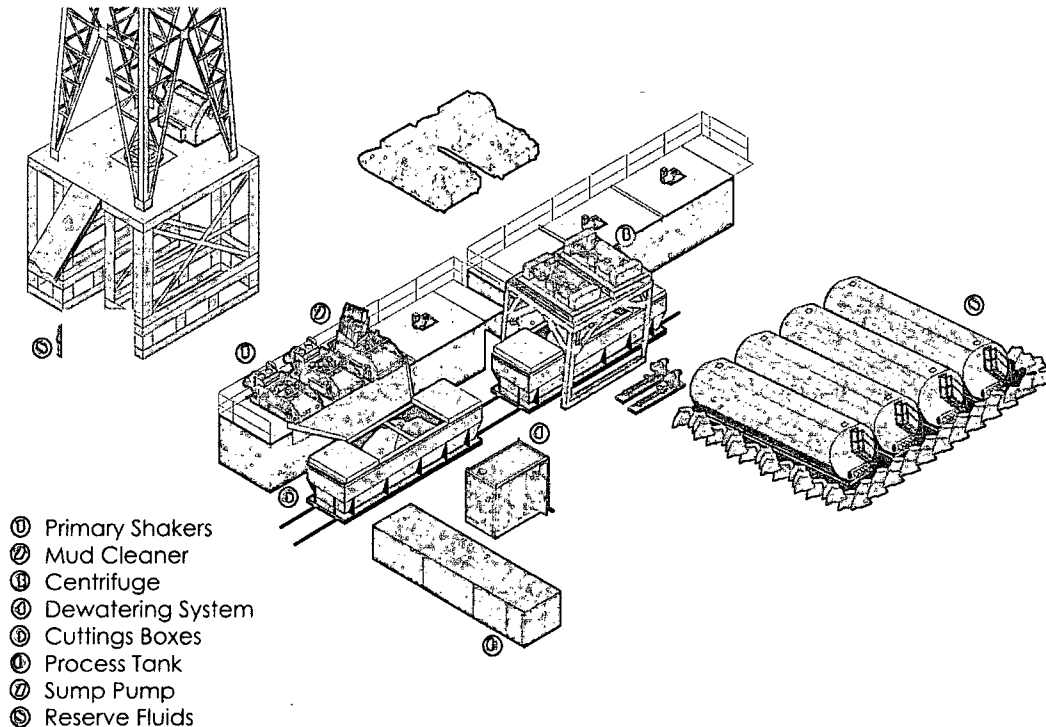
## **II. Operations and Maintenance Plan**

*Primary Shakers:* The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

**Mud Cleaner:** The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.

  
devon

## Closed Loop Schematic



**Centrifuges:** The centrifuges can be utilized depending on the well's anticipated solids volume. One or two centrifuges can be used depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

**Dewatering System:** The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds

ultra fine solids into a mass that is within the centrifuge operating design. The dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

*Cuttings Boxes:* Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank:* (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

*Sump and Sump Pump:* The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

*Reserve Fluids (Tank Farm):* A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Solids Control service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

### **III. Closure Plan**

A maximum 170' X 170' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.