

OCD-HOBBS
HOBBS OCD

MAY 23 2012

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

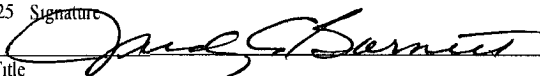
FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

1a Type of work ☒ DRILL ☐ REENTER		5 Lease Serial No SHL:LC061873A BHL LC061873B
1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6 If Indian, Allottee or Tribe Name
2 Name of Operator Devon Energy Production Company, LP		7 If Unit or CA Agreement, Name and No Cotton Draw Unit NMNM-70928X
3a Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260	3b Phone No (include area code) 405-228-8699	8 Lease Name and Well No Cotton Draw Unit 157K
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 330 FSL & 660 FWL UNIT M At proposed prod zone 200 FNL & 660 FWL UNIT D PP: 330 FSL & 660 FWL		9 API Well No 30-025-40584
11 Sec, T R M or Blk and Survey or Area SEC 18 T25S R32E		10 Field and Pool, or Exploratory Paduca; Delaware
12 Distance in miles and direction from nearest town or post office* Approximately 24 miles east of Loving, NM.		12 County or Parish Lea County
13 State NM		13 State NM
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drng unit line, if any) 200'	16 No of acres in lease SHL:319ac BHL: 1759ac	17 Spacing Unit dedicated to this well W/2 W/2 160 Acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft See attached map.	19 Proposed Depth 8275' MD 12,797' TVD	20 BLM/BIA Bond No on file CO-1104
21 Elevations (Show whether DF, KDB, RT, GL, etc). 3394.5' GL	22 Approximate date work will start*	23 Estimated duration 45 days

24. Attachments

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

- | | |
|---|--|
| 1 Well plat certified by a registered surveyor. | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2 A Drilling Plan. | 5 Operator certification |
| 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6 Such other site specific information and/or plans as may be required by the authorized officer |

25 Signature 	Name (Printed/Typed) Judy A. Barnett	Date 03/01/2012
Title Regulatory Specialist		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date MAY 21 2012
Title FIELD MANAGER	Office CARLSBAD FIELD 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 USC Section 1001 and Title 43 USC 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

*(Instructions on page 2)

Carlsbad Controlled Water Basin



Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

DRILLING PROGRAM

Devon Energy Production Company, LP

Cotton Draw Unit 157H

Surface Location: 330' FSL & 660' FWL, Unit M, Sec 18 T25S R32E, Lea, NM

Bottom Hole Location: 200' FNL & 660' FWL, Unit D, Sec 18 T25S R32E, Lea, NM

1. Geologic Name of Surface Formation

a. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a. Quaternary	180'	FW
b. Rustler	605'	FW
c. Salado	938'	
d. Castile	2847'	
e. Base of Salt	4110'	
f. Lamar	4412'	Oil
g. Bell Canyon	4443'	Oil
h. Cherry Canyon	5369'	Oil
i. Brushy Canyon	6782'	Oil
j. Total Depth	12797'	Max TVD: 8,295'

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 17 1/2" casing at 850' and circulating cement back to surface. The Delaware will be protected by setting 9 5/8" casing at 4350' and circulating cement to surface. The Delaware intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing.

Casing Program:

	<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
See COA	17 1/2"	0 - 850' ⁷⁴⁰	13 3/8"	0' - 850' ⁷⁴⁰	48#	STC	H-40
	12 1/4"	850-4350'	9 5/8"	0'-4350'	40#	LTC	J-55
	8 3/4"	4350-7500'	5 1/2"	0-7500'	17#	LTC	HCP110
	8 3/4"	7500-12797'	5 1/2"	7500-12,797'	17#	BTC	HCP110

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design</u>	<u>Burst Design</u>	<u>Tension Design</u>
	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>
13 3/8"	1.93	4.35	8.15
9 5/8" 40#	1.14	1.75	2.95
5 1/2" 17#	1.60	2.00	1.50
5 1/2" 17#	1.80	2.20	5.20

Cement Program: ((volumes based on at least 25% excess):

13 3/8"	Lead: 600 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.4% Fresh Water, 13.5 ppg Yield: 1.75 cf/sk. Tail: 250 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water, 14.8 ppg Yield: 1.35 cf/sk. TOC @ surface
9 5/8" Intermediate	Lead: 1,200 sacks (35:35) Poz (Fly Ash):Class C + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 107.8% Fresh Water, 12.5 ppg Yield: 2.05 cf/sk Tail: 300 sacks (60:40) Poz (Fly Ash) Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 52.7% Water, 13.8 ppg Yield: 1.38 cf/sk TOC @ surface
5 1/2" Production	1st Stage Lead: 600 sacks (35:65) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 2% bwoc Bentonite + 0.6% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 102.5% Fresh Water, 12.5 ppg Yield: 2.00 cf/sk Tail: 1,600 sacks (50:50) Poz (Fly Ash) Class H Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 58.3% Fresh Water, 14.2 ppg Yield: 1.28 cf/sk DV TOOL at 6,000' 2nd Stage Lead: 600 sacks Class C Cement + 1% bwow Calcium Chloride + 0.125 lbs/sack Cello Flake + 157.8% Fresh Water, 11.4 ppg Yield: 2.88 cf/sk Tail: 150 sacks (60:40) Poz (Fly Ash):Class C Cement + 1% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 63.2% Fresh Water, 13.8 ppg Yield: 1.38 cf/sk TOC @ 3,850'
<u>TOC for All Strings</u>	
Surface	0'
Intermediate:	0'
Production	3,850' (approx 500' above 9-5/8" shoe)

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

Pressure Control Equipment BOP DESIGN:

The BOP system used to drill the 12-1/4" and 8-3/4" hole 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 surface and intermediate casing shoes.

The pipe rams will be operated and checked as per Onshore Order No 2. 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.

Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' – 850', 740	8.4-9.0	30-34	NC	FW
850' – 4350'	9.8-10.0	28-32	NC	Brine
4350' – 12,797'	8.6-9.0	28-32	NC-12	FW

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

3. Auxiliary Well Control and Monitoring Equipment:
 - a. A Kelly cock will be in the drill string at all times.
 - b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times
 - c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 20" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 20" shoe until total depth is reached.
4. Logging, Coring, and Testing Program: See COF
 - a. Drill stem tests will be based on geological sample shows.
 - b. 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.
 - c. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. 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.

5. Potential Hazards:

- a. 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. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 4405 psi and Estimated BHT 145°. No H₂S is anticipated to be encountered.

6. Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. 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 well and construct surface facilities and/or lay flow lines in order to place well on production.



Weatherford™

Drilling Services

Proposal



devon

COTTON DRAW UNIT #157H

LEA COUNTY, NM

WELL FILE: PLAN 1

JANUARY 12, 2012

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

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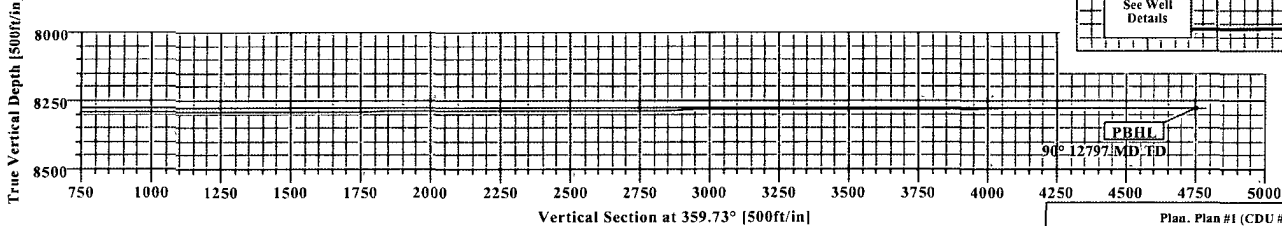
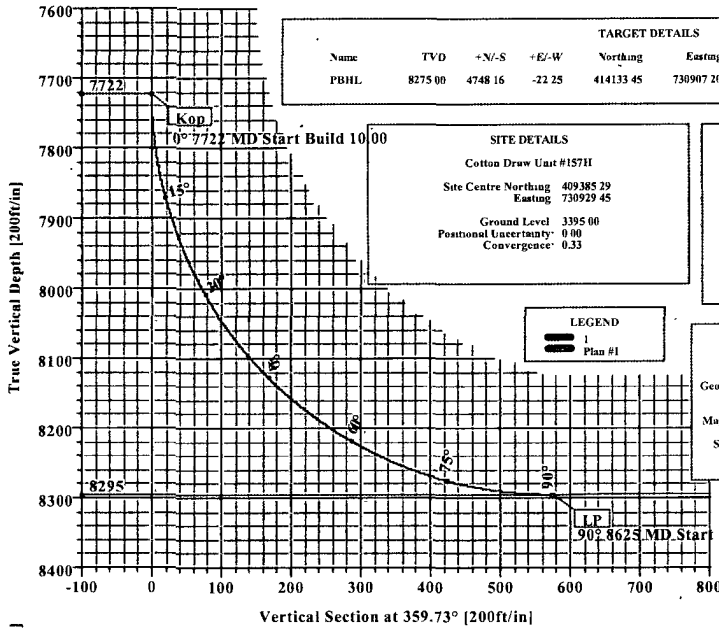
+1.432.561.8895 Fax

www.weatherford.com

devon

Cotton Draw Unit #157H
Lea County, New Mexico

KB ELEV 3421
GL ELEV 3395



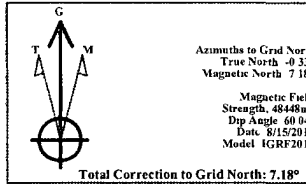
SECTION DETAILS										
Sec	MD	Inc	A ₁	TVD	+N/-S	+E/-W	DLeg	IFace	VSec	Target
1	0.00	0.00	359.73	0.00	0.00	0.00	0.00	0.00	0.00	
2	7722.05	0.00	359.73	7722.05	0.00	0.00	0.00	0.00	0.00	
3	8624.80	90.27	359.73	8295.00	875.70	-2.70	10.00	359.73	575.70	
4	12797.35	90.27	359.73	8275.00	4748.16	-22.25	0.00	0.00	4748.21	PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northmg	Eastmg	Latitude	Longitude	Slot
CDL #157H	0.00	0.00	409385.29	730929.45	32°07'26.385N	103°43'15.265W	N/A

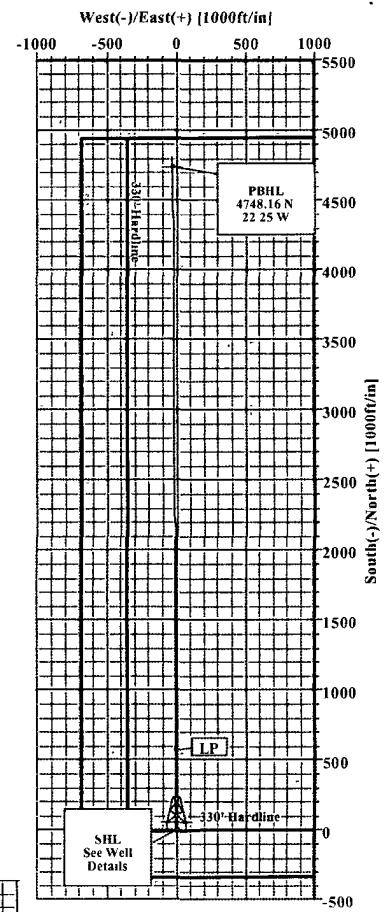
TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northmg	Eastmg	Latitude	Longitude
PBHL	8275.00	4748.16	-22.25	414133.45	730907.20	32°08'13.372N	103°43'15.210W

SITE DETAILS			
Cotton Draw Unit #157H			
Site Centre Northmg	409385.29	Eastmg	730929.45
Ground Level	3395.00	Postional Uncertainty	0.00
Convergence	0.33		

LEGEND	
1	Plan #1



FIELD DETAILS	
Lea County, New Mexico (NAD 83)	
Geodetic System	US State Plane Coordinate System 1983
Ellipsoid	GRS 1980
Zone	New Mexico, Eastern Zone
Magnetic Model	IGRF2010
System Datum	Mean Sea Level
Local North	Grid North



Plan: Plan #1 (CDU #157H/I)
Created By: Russell W. Joyner Date: 1/12/2012



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy Date: 1/12/2012 Time: 13 51:40 Page: 1
Field: Lea County, New Mexico (NAD 83) Co-ordinate(NE) Reference: Well: CDU #157H, Grid North
Site: Cotton Draw Unit #157H Vertical (TVD) Reference: SITE 3421.0
Well: CDU #157H Section (VS) Reference: Well (0.00N,0.00E,359.73Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #1 Date Composed: 1/12/2012
Principal: Yes Version: 1
Tied-to: From Surface

Field: Lea County, New Mexico (NAD 83)

Map System: US State Plane Coordinate System 1983 Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1980 Coordinate System: Well Centre
Sys Datum: Mean Sea Level Geomagnetic Model: IGRF2010

Site: Cotton Draw Unit #157H

Site Position: Northing: 409385 29 ft Latitude: 32 7 26 385 N
From: Map Easting: 730929 45 ft Longitude: 103 43 15 265 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3395 00 ft Grid Convergence: 0 33 deg

Well: CDU #157H Slot Name:
Well Position: +N/-S 0.00 ft Northing: 409385 29 ft Latitude: 32 7 26 385 N
+E/-W 0.00 ft Easting: 730929 45 ft Longitude: 103 43 15 265 W
Position Uncertainty: 0.00 ft

Wellpath: 1 Drilled From: Surface
Current Datum: SITE Tie-on Depth: 0.00 ft
Magnetic Data: 8/15/2012 Height 3421.00 ft Above System Datum: Mean Sea Level
Field Strength: 48448 nT Declination: 7.51 deg
Vertical Section: Depth From (TVD) +N/-S Mag Dip Angle: 60.04 deg
ft ft +E/-W Direction
deg
0.00 0.00 0.00 359.73

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	359.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7722.05	0.00	359.73	7722.05	0.00	0.00	0.00	0.00	0.00	0.00	
8624.80	90.27	359.73	8295.00	575.70	-2.70	10.00	10.00	0.00	359.73	
12797.35	90.27	359.73	8275.00	4748.16	-22.25	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
7700.00	0.00	359.73	7700.00	0.00	0.00	0.00	0.00	409385.29	730929.45	
7722.05	0.00	359.73	7722.05	0.00	0.00	0.00	0.00	409385.29	730929.45	Kop
7800.00	7.80	359.73	7799.76	5.29	-0.02	5.29	10.00	409390.58	730929.43	
7900.00	17.80	359.73	7897.15	27.41	-0.13	27.41	10.00	409412.70	730929.32	
8000.00	27.80	359.73	7989.23	66.11	-0.31	66.11	10.00	409451.40	730929.14	
8100.00	37.80	359.73	8073.18	120.20	-0.56	120.20	10.00	409505.49	730928.89	
8200.00	47.80	359.73	8146.47	188.05	-0.88	188.05	10.00	409573.34	730928.57	
8300.00	57.80	359.73	8206.86	267.60	-1.25	267.60	10.00	409652.89	730928.20	
8400.00	67.80	359.73	8252.52	356.42	-1.67	356.42	10.00	409741.71	730927.78	
8500.00	77.80	359.73	8282.06	451.82	-2.12	451.83	10.00	409837.11	730927.33	
8600.00	87.80	359.73	8294.58	550.91	-2.58	550.91	10.00	409936.20	730926.87	
8624.80	90.27	359.73	8295.00	575.70	-2.70	575.70	10.00	409960.99	730926.75	LP
8700.00	90.27	359.73	8294.64	650.90	-3.05	650.91	0.00	410036.19	730926.40	
8800.00	90.27	359.73	8294.16	750.90	-3.52	750.91	0.00	410136.19	730925.93	
8900.00	90.27	359.73	8293.68	850.90	-3.99	850.90	0.00	410236.19	730925.46	
9000.00	90.27	359.73	8293.20	950.89	-4.46	950.90	0.00	410336.18	730924.99	
9100.00	90.27	359.73	8292.72	1050.89	-4.92	1050.90	0.00	410436.18	730924.53	



Weatherford International Ltd.

WFT Plan Report - X & Y's

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Cotton Draw Unit #157H
Well: CDU #157H
Wellpath: 1

Date: 1/12/2012 Time: 13:51:40 Page: 2
Co-ordinate(NE) Reference: Well. CDU #157H, Grid North
Vertical (TVD) Reference: SITE 3421.0
Section (VS) Reference: Well (0.00N,0.00E,359.73Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
9200 00	90.27	359.73	8292.24	1150.89	-5.39	1150.90	0.00	410536.18	730924.06	
9300 00	90.27	359.73	8291.76	1250.89	-5.86	1250.90	0.00	410636.18	730923.59	
9400 00	90.27	359.73	8291.29	1350.88	-6.33	1350.90	0.00	410736.17	730923.12	
9500 00	90.27	359.73	8290.81	1450.88	-6.80	1450.90	0.00	410836.17	730922.65	
9600 00	90.27	359.73	8290.33	1550.88	-7.27	1550.90	0.00	410936.17	730922.18	
9700 00	90.27	359.73	8289.85	1650.88	-7.74	1650.90	0.00	411036.17	730921.71	
9800 00	90.27	359.73	8289.37	1750.88	-8.20	1750.89	0.00	411136.17	730921.25	
9900 00	90.27	359.73	8288.89	1850.87	-8.67	1850.89	0.00	411236.16	730920.78	
10000.00	90.27	359.73	8288.41	1950.87	-9.14	1950.89	0.00	411336.16	730920.31	
10100.00	90.27	359.73	8287.93	2050.87	-9.61	2050.89	0.00	411436.16	730919.84	
10200 00	90.27	359.73	8287.45	2150.87	-10.08	2150.89	0.00	411536.16	730919.37	
10300.00	90.27	359.73	8286.97	2250.86	-10.55	2250.89	0.00	411636.15	730918.90	
10400 00	90.27	359.73	8286.49	2350.86	-11.02	2350.89	0.00	411736.15	730918.43	
10500.00	90.27	359.73	8286.01	2450.86	-11.48	2450.89	0.00	411836.15	730917.97	
10600 00	90.27	359.73	8285.53	2550.86	-11.95	2550.89	0.00	411936.15	730917.50	
10700.00	90.27	359.73	8285.05	2650.85	-12.42	2650.88	0.00	412036.14	730917.03	
10800.00	90.27	359.73	8284.57	2750.85	-12.89	2750.88	0.00	412136.14	730916.56	
10900 00	90.27	359.73	8284.09	2850.85	-13.36	2850.88	0.00	412236.14	730916.09	
11000 00	90.27	359.73	8283.62	2950.85	-13.83	2950.88	0.00	412336.14	730915.62	
11100.00	90.27	359.73	8283.14	3050.85	-14.30	3050.88	0.00	412436.14	730915.15	
11200 00	90.27	359.73	8282.66	3150.84	-14.76	3150.88	0.00	412536.13	730914.69	
11300 00	90.27	359.73	8282.18	3250.84	-15.23	3250.88	0.00	412636.13	730914.22	
11400.00	90.27	359.73	8281.70	3350.84	-15.70	3350.88	0.00	412736.13	730913.75	
11500 00	90.27	359.73	8281.22	3450.84	-16.17	3450.87	0.00	412836.13	730913.28	
11600.00	90.27	359.73	8280.74	3550.83	-16.64	3550.87	0.00	412936.12	730912.81	
11700.00	90.27	359.73	8280.26	3650.83	-17.11	3650.87	0.00	413036.12	730912.34	
11800 00	90.27	359.73	8279.78	3750.83	-17.58	3750.87	0.00	413136.12	730911.87	
11900.00	90.27	359.73	8279.30	3850.83	-18.05	3850.87	0.00	413236.12	730911.40	
12000 00	90.27	359.73	8278.82	3950.83	-18.51	3950.87	0.00	413336.12	730910.94	
12100.00	90.27	359.73	8278.34	4050.82	-18.98	4050.87	0.00	413436.11	730910.47	
12200 00	90.27	359.73	8277.86	4150.82	-19.45	4150.87	0.00	413536.11	730910.00	
12300 00	90.27	359.73	8277.38	4250.82	-19.92	4250.87	0.00	413636.11	730909.53	
12400 00	90.27	359.73	8276.90	4350.82	-20.39	4350.86	0.00	413736.11	730909.06	
12500 00	90.27	359.73	8276.43	4450.81	-20.86	4450.86	0.00	413836.10	730908.59	
12600 00	90.27	359.73	8275.95	4550.81	-21.33	4550.86	0.00	413936.10	730908.12	
12700.00	90.27	359.73	8275.47	4650.81	-21.79	4650.86	0.00	414036.10	730907.66	
12797 35	90.27	359.73	8275.00	4748.16	-22.25	4748.21	0.00	414133.45	730907.20	PBHL

Targets

Name	Description	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->						
	Dip.							Deg	Min	Sec	Deg	Min	Sec				
PBHL			8275.00	4748.16	-22.25	414133.45	730907.20	32	8	13	372	N	103	43	15	210	W

Casing Points

MD	TVD	Diameter	Hole Size	Name



Weatherford International Ltd.

WFT Plan Report - X & Y's



Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Cotton Draw Unit #157H
Well: CDU #157H
Wellpath: 1

Date: 1/12/2012 Time: 13 51.40 Page: 3
Co-ordinate(NE) Reference: Well: CDU #157H, Grid North
Vertical (TVD) Reference: SITE 3421.0
Section (VS) Reference: Well (0.00N,0.00E,359 73Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Annotation

MD ft	TVD ft	
7722.05	7722.05	Kop
8624.80	8295.00	LP
12797.35	8275.00	PBHL

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

**Weatherford****Weatherford Drilling Services**

GeoDec v5.03

Report Date: January 12, 2012
Job Number: _____
Customer: Devon Energy
Well Name: Cotton Draw Unit #157H
API Number: _____
Rig Name: _____
Location: Lea County, NM
Block: _____
Engineer: R Joyner

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 409385.290 USFT	Latitude 32.1239980 DEG
East/West 730929.450 USFT	Longitude -103.7209023 DEG
Grid Convergence: .33°	

Total Correction: +7.18°

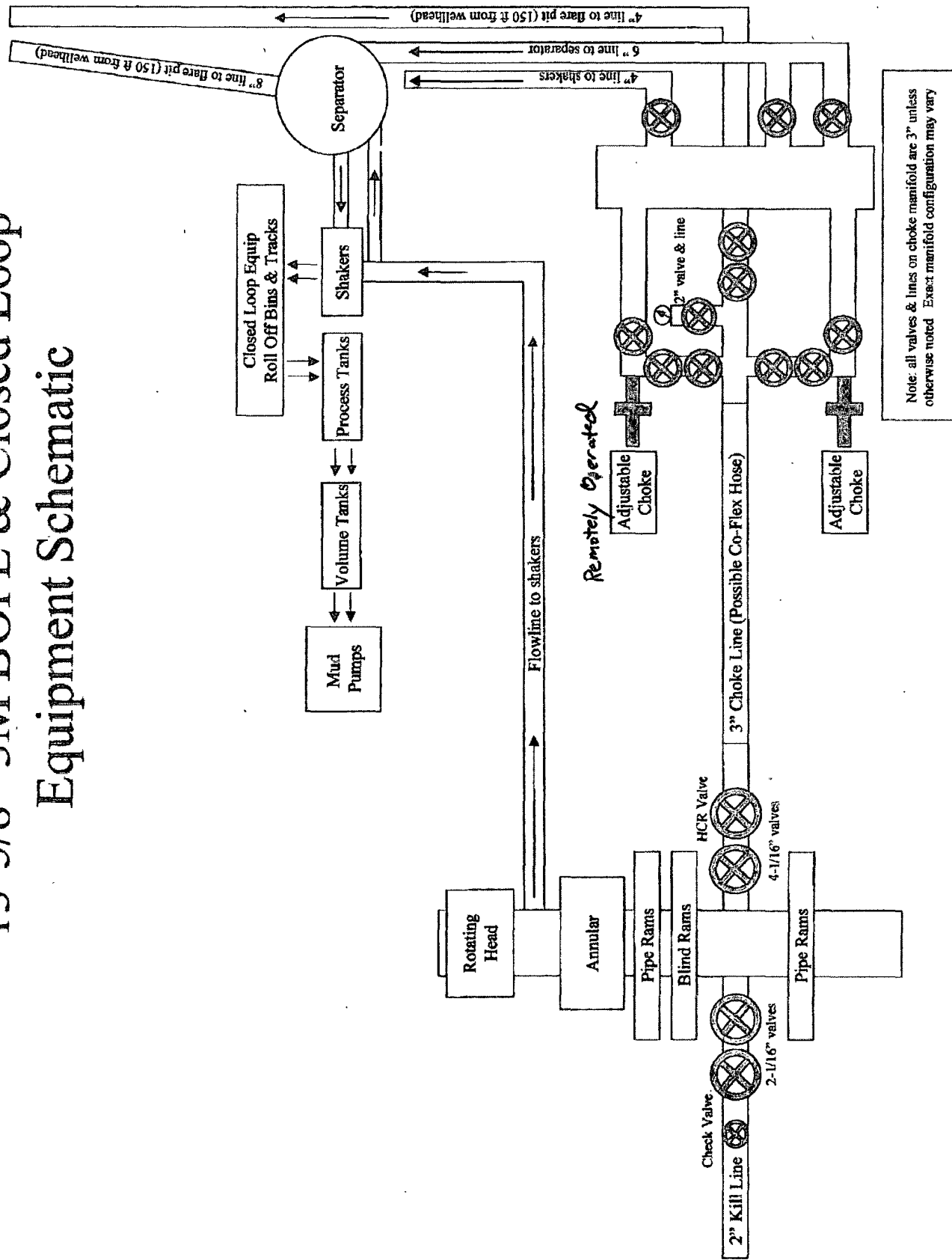
Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.12400° N	32° 7 min 26.393 sec
Longitude =	103.72090° W	103° 43 min 15.248 sec

Magnetic Declination =	7.51°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6554
Local Field Strength =	48444 nT	Magnetic Vector X = 23986 nT
Magnetic Dip =	60.04°	Magnetic Vector Y = 3160 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z = 41971 nT
Spud Date =	Aug 15, 2012	Magnetic Vector H = 24193 nT

Signed: _____

Date: _____

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



NOTES REGARDING BLOWOUT PREVENTERS

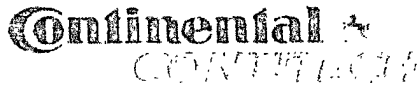
Devon Energy Production Company, LP

Cotton Draw Unit 157H

Surface Location: 330' FSL & 660' FWL, Unit M, Sec 18 T25S R32E, Lea, NM

Bottom Hole Location: 200' FNL & 660' FWL, Unit D, Sec 18 T25S R32E, 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 3,000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3,000 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.



Fluid Technology

ContiTech Beattie Corp.
Webs: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as required and suitable for the application regardless of whether the hose is secured or unsecured configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses provided the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

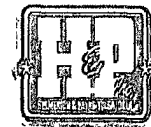
Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com





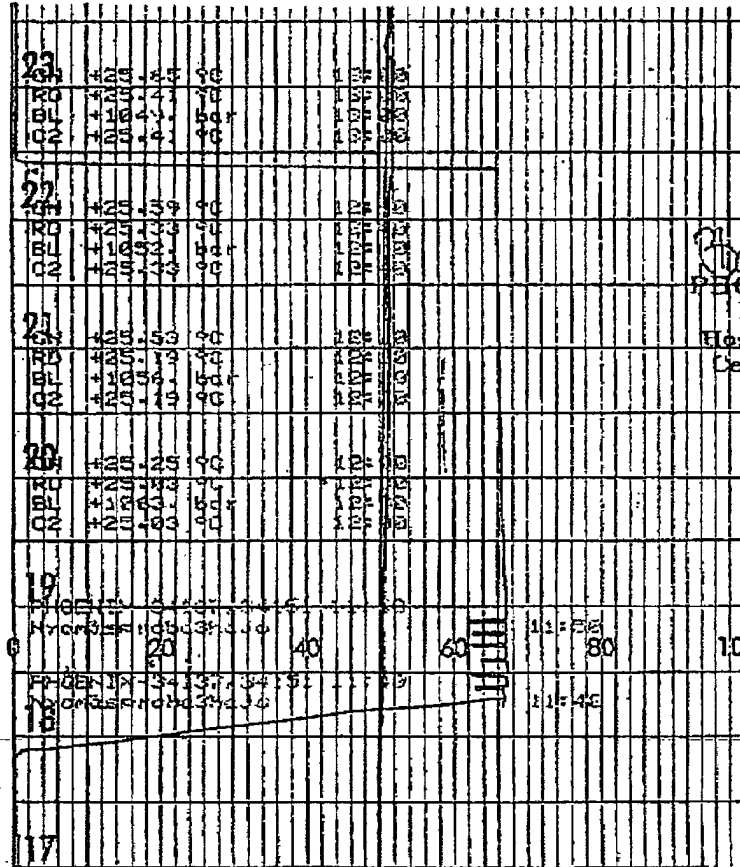
QUALITY DOCUMENT

**PHOENIX RUBBER
INDUSTRIAL LTD.**

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

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurusemarg3.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 See attachment. (1 page)					
↑ 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 PHOENIX RUBBER Industrial Ltd. Hose Inspection and Pressure Testing Department 	



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