Split Estate

OCD Hobbs

14-667

HOBBS OCD

JUN 06 2014

RECEIVED

Form 3160-3
(March 2012)

UNORTHODOX LOCATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

(4)

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM 94186
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No. THISTLE UNIT NM88526X
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. THISTLE UNIT 51H (30884)
2. Name of Operator Devon Energy Production Company, L.P. (6137)	9. API Well No. 30-025-41896
3a. Address 333 W. Sheridan, Oklahoma City, OK 73102 / 3b. Phone No. (include area code) 405.552.7848	10. Field and Pool, or Exploratory TRIPLE X; BONE SPRING (59900)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 200 FNL & 430 FWL, Unit D PP: 200 FNL & 430 FWL; At proposed prod. zone 330 FSL & 660 FWL, Unit M	11. Sec., T. R. M. or Blk. and Survey or Area Sec 28, T23S, R33E
14. Distance in miles and direction from nearest town or post office* Approximately 28 miles SW from Eunice, NM	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) See attached map	16. No. of acres in lease 960 ac / 17. Spacing Unit dedicated to this well 160 ac
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	19. Proposed Depth TVD: 11,239'; MD: 15,733' / 20. BLM/BIA Bond No. on file CO-1104; NBM-000801
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,683' GL	22. Approximate date work will start* 09/15/2014 / 23. Estimated duration 45 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:

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

25. Signature	Name (Printed/Typed) David H. Cook	Date 03/26/2014
Title Regulatory Compliance Professional		
Approved by (Signature) Steve Caffey	Name (Printed/Typed)	Date MAY 29 2014
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 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)

Carlsbad Controlled Water Basin

KZ 06/09/14

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

JUN 09 2014

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this _27th__ day of __March, 2014.
Printed Name: David H. Cook
Signed Name: _____
Position Title: Regulatory Specialist
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-552-6559

DRILLING PROGRAM

Devon Energy Production Company, L.P.
Thistle Unit 51H

1. **Geologic Name of Surface Formation:** Quaternary

2. **Estimated Tops of Geological Markers & Depths of Anticipated FW, Oil, or Gas:**

a.	Fresh Water	400'	
b.	Rustler	1290'	Barren
c.	Top of Salt	1770'	Barren
d.	Base of Salt/Lower Castile	5090'	Barren
e.	Delaware	5190'	Oil / Gas
f.	Cherry Canyon	6060'	Oil / Gas
g.	Brushy Canyon	7640'	Oil / Gas
h.	Bone Spring Lime	9070'	Oil / Gas
i.	1st Bone Spring SS	10065'	Oil / Gas
j.	2nd Bone Spring SS	10771'	Oil / Gas
	Total Depth	11,239' TVD	15,733' MD

3. **Pressure Control Equipment:**

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

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.

See COA

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 and will be secured with anchors and/or safety clamps as per the manufacturer's requirements. (See attached spec sheets).

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.

4. **Casing Program:**

See COA

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight (lb/ft)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2"	0 – 1,325' 1400'	13-3/8"	0 - 1,325'	48	STC	H-40	1.30	3.02	8.51
12-1/4"	1,325-5,200' 5150'	9-5/8"	0 - 5,200'	40	BTC	HCK-55	1.56	1.75	4.45
8-3/4"	5,200-15,733'	5-1/2"	0 - 15,733'	17	BTC	P-110	1.60	2.19	2.97

Casing Notes:

- All casing is new and API approved

Maximum Lateral TVD: 11,239'

5. **Proposed mud Circulations System:**

See COA

Depth	Mud Weight	Viscosity (cp)	Fluid Loss	Type System
0-1,325' 1400'	8.4-8.6	1-3	N/C	FW
1,325-5,200' 5150'	9.9-10.0	1-3	<100	Brine
5,200-15,733'	8.8-9.2	1-3	<100	Cut Brine

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6. Cementing Table:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8" Surface Casing	670	13.5	9.08	1.72	Lead	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water
	560	14.8	6.34	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate Casing	1130	12.9	9.82	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water
5-1/2" Production Casing	550	11.9	12.89	2.26	Lead #1	(50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000 + 76.4% Fresh Water
	330	12.5	10.81	1.96	Lead #2	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	1290	14.5	5.32	1.21	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

See COA

TOC for all Strings:

13-3/8" Surface Csg @ 0'
9-5/8" Intermediate Csg @ 0'
5-1/2" Production Csg @ ~~4,700'~~ See COA

Notes:

- Cement volumes Surface 100%, Intermediate 75%, Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data

7. Logging, Coring, and Testing Program:

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.

See COA

i. No logs are planned.
ii. No coring program is planned
iii. 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. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area, and none is anticipated to be encountered. 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 being used to drill this well. Estimated BHP: 5058 psi, and estimated BHT: 174 degrees.

See COA

b. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13-3/8" casing shoe until the 5-1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13-3/8" shoe until total depth is reached.

9. 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 20 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.

5D Plan Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NM*
Site Name: *Thistle Unit 51H*
Well Name: *Thistle Unit 51H*
Plan: *P1:V1*

12 March 2014

devon

Thistle Unit 51H
Lea Co, NM

Plan Data for Thistle Unit 51H

Plan Point Information:

DogLeg Severity Unit: °/100.00ft — Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)
0.00	0.00	0.00	0.00	0.00	0.00	467279.11	772779.99	0.00	0.00
10711.57	0.00	0.00	10711.57	0.00	0.00	467279.11	772779.99	0.00	0.00
11455.99	89.33	176.82	11189.00	-471.16	26.20	466807.95	772806.19	471.88	12.00
15733.89	89.33	176.82	11239.00	-4742.17	263.69	462536.94	773043.68	4749.50	0.00

Plan Data for Thistle Unit 51H

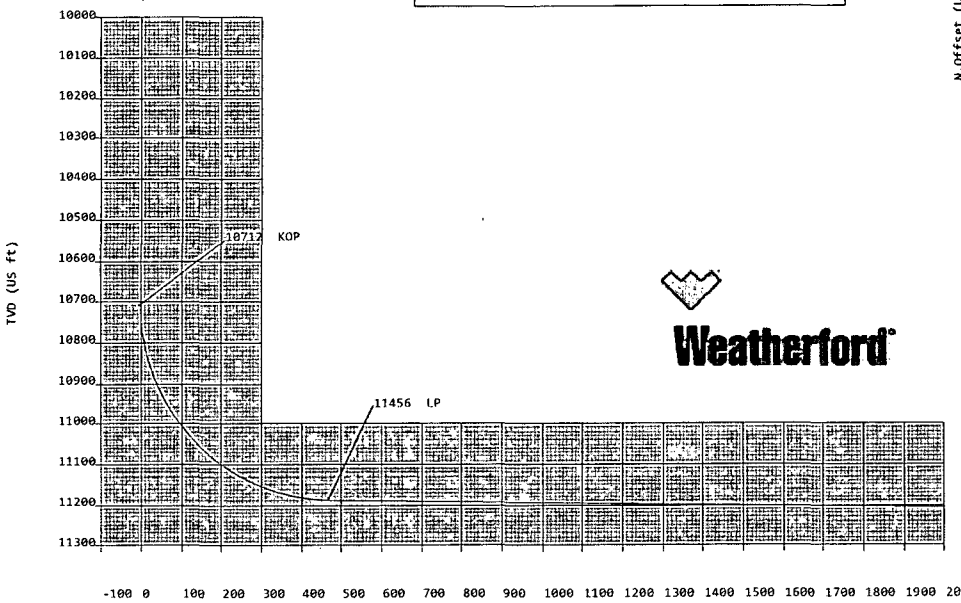
Target Set Information:
Name: Thistle Unit 51H Target
Position offsets from Slot centre

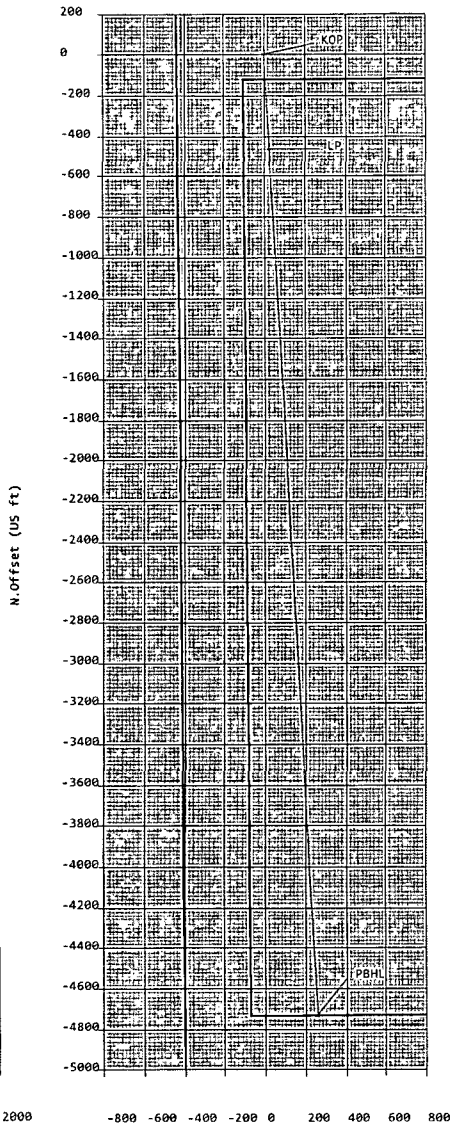
Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Shape	Comment
PBHL	11239.00	-4742.17	263.69	462536.94	773043.68	Cuboid	

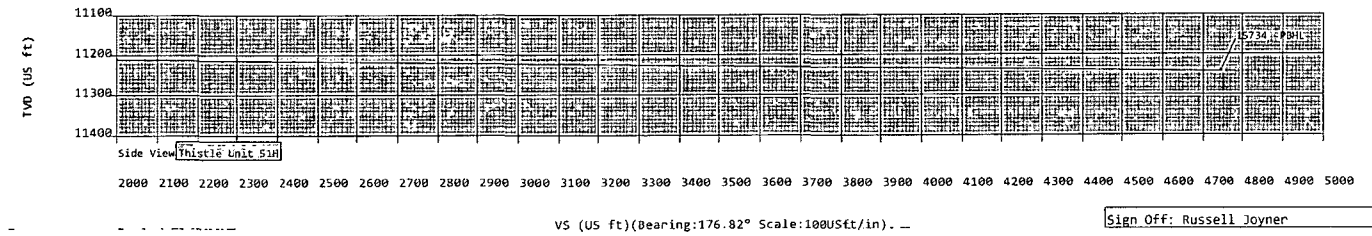
Plan Data for Thistle Unit 51H

Slot: Thistle Unit 51H
Position:
Offset is from Site centre
+N/-S: 0.00USft — Northing: 467279.11USft — Latitude: 32°16'56.7"
+E/-W: 0.00USft — Easting: 772779.99USft — Longitude: -103°35'3.9"
Elevation Above VRD: 3683.00USft

KB-3708
GL-3683







Sign Off: Russell Joyner

Weatherford

Thistle Unit 51H

Field Name
Lea Co, NM Nad 83 NM

Map Units : US ft
Company Name : Devon Energy
Vertical Reference Datum (VRD) : Mean Sea Level
Projected Coordinate System : NAD83 / New Mexico East (ftUS)
Comment :

Site Name
Thistle Unit 51H

Units : US ft
North Reference : Grid
Convergence Angle : 0.40

Position
Northing : 467279.11 US ft
Latitude : 32° 16' 56.65"
Easting : 772779.99 US ft
Longitude : -103° 35' 3.91"

Elevation above Mean Sea Level:3683.00 US ft
Comment :

Slot Name
Thistle Unit 51H

Position (Offsets relative to Site Centre)
+N / -S : 0.00 US ft
Northing :467279.11 US ft
Latitude : 32°16'56.65"
+E / -W : 0.00 US ft
Easting :772779.99 US ft
Longitude : -103°35'3.91"

Slot TVD Reference : Ground Elevation
Elevation above Mean Sea Level : 3683.00 US ft
Comment :

Well Name
Thistle Unit 51H

Type : Main well
UWI :
Plan : P1:V1
Rig Height *Drill Floor* : 25.00 US ft
Relative to Mean Sea Level: 3708.00 US ft
Comment :
Closure Distance : 4749.5 US ft
Closure Azimuth : 176.817°
Vertical Section (Position of Origin Relative to Slot)
+N / -S : 0.00 US ft
+E / -W : 0.00 US ft
Az :176.82°
Magnetic Parameters
Model : Default
Field Strength : 50000.0nT
Dec : 0.00°
Dip : 0.00°
Date : 17/Feb/2014

Target Set

Name : Thistle Unit 51H Target
Number of Targets : 1

Comment :

Target Name:
PBHL

Position (Relative to Slot centre)
+N / -S : -4742.17US ft
Northing : 462536.94 US ft
Latitude : 32°16'9.71"
+E / -W : 263.69 US ft
Easting : 773043.68US ft
Longitude : -103°35'1.23"

Shape:
Cuboid

TVD (Drill Floor) : 11239.00 US ft

Orientation **Azimuth :** 0.00°
Inclination : 0.00°
Dimensions **Length :** 0.00 US ft
Breadth : 0.00 US ft
Height : 0.00 US ft

5D Plan Report

Well path created using minimum curvature

Salient Points (Relative to Slot centre, TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100 US ft)	VS (US ft)	B.Rate (°/100 US ft)	T.Rate (°/100 US ft)	T.Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	
10711.57	0.00	0.00	10711.57	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	KOP
11455.99	89.33	176.82	11189.00	-471.16	26.20	12.00	471.88	12.00	0.00	176.82	LP
15733.89	89.33	176.82	11239.00	-4742.17	263.69	0.00	4749.50	0.00	0.00	0.00	PBHL

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
100.00	0.00	0.00	100.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
200.00	0.00	0.00	200.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
300.00	0.00	0.00	300.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
400.00	0.00	0.00	400.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
500.00	0.00	0.00	500.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
600.00	0.00	0.00	600.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
700.00	0.00	0.00	700.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
800.00	0.00	0.00	800.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
900.00	0.00	0.00	900.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1000.00	0.00	0.00	1000.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1100.00	0.00	0.00	1100.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1200.00	0.00	0.00	1200.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1300.00	0.00	0.00	1300.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1400.00	0.00	0.00	1400.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1500.00	0.00	0.00	1500.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1600.00	0.00	0.00	1600.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1700.00	0.00	0.00	1700.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1800.00	0.00	0.00	1800.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
1900.00	0.00	0.00	1900.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2000.00	0.00	0.00	2000.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2100.00	0.00	0.00	2100.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2200.00	0.00	0.00	2200.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2300.00	0.00	0.00	2300.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2400.00	0.00	0.00	2400.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2500.00	0.00	0.00	2500.00	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2599.99	0.00	0.00	2599.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2699.99	0.00	0.00	2699.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2799.99	0.00	0.00	2799.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2899.99	0.00	0.00	2899.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
2999.99	0.00	0.00	2999.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3099.99	0.00	0.00	3099.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3199.99	0.00	0.00	3199.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3299.99	0.00	0.00	3299.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3399.99	0.00	0.00	3399.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3499.99	0.00	0.00	3499.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3599.99	0.00	0.00	3599.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3699.99	0.00	0.00	3699.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3799.99	0.00	0.00	3799.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3899.99	0.00	0.00	3899.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
3999.99	0.00	0.00	3999.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4099.99	0.00	0.00	4099.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4199.99	0.00	0.00	4199.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4299.99	0.00	0.00	4299.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4399.99	0.00	0.00	4399.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4499.99	0.00	0.00	4499.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4599.99	0.00	0.00	4599.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4699.99	0.00	0.00	4699.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4799.99	0.00	0.00	4799.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
4899.99	0.00	0.00	4899.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
4999.99	0.00	0.00	4999.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5099.99	0.00	0.00	5099.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5199.99	0.00	0.00	5199.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5299.99	0.00	0.00	5299.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5399.99	0.00	0.00	5399.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5499.99	0.00	0.00	5499.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5599.99	0.00	0.00	5599.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5699.99	0.00	0.00	5699.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5799.99	0.00	0.00	5799.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5899.99	0.00	0.00	5899.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
5999.99	0.00	0.00	5999.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6099.99	0.00	0.00	6099.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6199.99	0.00	0.00	6199.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6299.99	0.00	0.00	6299.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6399.99	0.00	0.00	6399.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6499.99	0.00	0.00	6499.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6599.99	0.00	0.00	6599.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6699.99	0.00	0.00	6699.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6799.99	0.00	0.00	6799.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6899.99	0.00	0.00	6899.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
6999.99	0.00	0.00	6999.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7099.99	0.00	0.00	7099.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7199.99	0.00	0.00	7199.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7299.99	0.00	0.00	7299.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7399.99	0.00	0.00	7399.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7499.99	0.00	0.00	7499.99	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7599.98	0.00	0.00	7599.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7699.98	0.00	0.00	7699.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7799.98	0.00	0.00	7799.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7899.98	0.00	0.00	7899.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
7999.98	0.00	0.00	7999.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8099.98	0.00	0.00	8099.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8199.98	0.00	0.00	8199.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8299.98	0.00	0.00	8299.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8399.98	0.00	0.00	8399.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
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8599.98	0.00	0.00	8599.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8699.98	0.00	0.00	8699.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
8799.98	0.00	0.00	8799.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
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8999.98	0.00	0.00	8999.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9099.98	0.00	0.00	9099.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9199.98	0.00	0.00	9199.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9299.98	0.00	0.00	9299.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9399.98	0.00	0.00	9399.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9499.98	0.00	0.00	9499.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9599.98	0.00	0.00	9599.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9699.98	0.00	0.00	9699.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9799.98	0.00	0.00	9799.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9899.98	0.00	0.00	9899.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
9999.98	0.00	0.00	9999.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10099.98	0.00	0.00	10099.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10199.98	0.00	0.00	10199.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10299.98	0.00	0.00	10299.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10399.98	0.00	0.00	10399.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10499.98	0.00	0.00	10499.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10599.98	0.00	0.00	10599.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	
10699.98	0.00	0.00	10699.98	0.00	0.00	-0.00	0.00	467279.11	772779.99	

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
10711.57	0.00	0.00	10711.57	0.00	0.00	-0.00	0.00	467279.11	772779.99	KOP
10799.98	10.61	176.82	10799.47	-8.15	0.45	8.16	12.00	467270.96	772780.44	
10899.98	22.61	176.82	10895.13	-36.64	2.04	36.69	12.00	467242.47	772782.03	
10999.98	34.61	176.82	10982.76	-84.36	4.69	84.49	12.00	467194.75	772784.68	
11099.98	46.61	176.82	11058.54	-149.23	8.30	149.46	12.00	467129.88	772788.29	
11199.98	58.61	176.82	11119.15	-228.41	12.70	228.76	12.00	467050.70	772792.69	
11299.98	70.61	176.82	11161.95	-318.45	17.71	318.94	12.00	466960.66	772797.70	
11399.98	82.61	176.82	11185.07	-415.40	23.10	416.04	12.00	466863.71	772803.09	
11455.99	89.33	176.82	11189.00	-471.16	26.20	471.88	12.00	466807.95	772806.19	LP
11499.98	89.33	176.82	11189.52	-515.07	28.64	515.87	0.00	466764.04	772808.63	
11599.98	89.33	176.82	11190.69	-614.91	34.19	615.86	0.00	466664.20	772814.18	
11699.98	89.33	176.82	11191.85	-714.75	39.74	715.85	0.00	466564.36	772819.73	
11799.98	89.33	176.82	11193.02	-814.59	45.30	815.85	0.00	466464.52	772825.29	
11899.98	89.33	176.82	11194.19	-914.43	50.85	915.84	0.00	466364.68	772830.84	
11999.98	89.33	176.82	11195.36	-1014.27	56.40	1015.83	0.00	466264.84	772836.39	
12099.98	89.33	176.82	11196.53	-1114.11	61.95	1115.83	0.00	466165.00	772841.94	
12199.98	89.33	176.82	11197.70	-1213.94	67.50	1215.82	0.00	466065.17	772847.49	
12299.98	89.33	176.82	11198.87	-1313.78	73.05	1315.81	0.00	465965.33	772853.04	
12399.98	89.33	176.82	11200.04	-1413.62	78.60	1415.81	0.00	465865.49	772858.59	
12499.98	89.33	176.82	11201.20	-1513.46	84.16	1515.80	0.00	465765.65	772864.15	
12599.97	89.33	176.82	11202.37	-1613.30	89.71	1615.79	0.00	465665.81	772869.70	
12699.97	89.33	176.82	11203.54	-1713.14	95.26	1715.78	0.00	465565.97	772875.25	
12799.97	89.33	176.82	11204.71	-1812.98	100.81	1815.78	0.00	465466.13	772880.80	
12899.97	89.33	176.82	11205.88	-1912.82	106.36	1915.77	0.00	465366.29	772886.35	
12999.97	89.33	176.82	11207.05	-2012.65	111.91	2015.76	0.00	465266.46	772891.90	
13099.97	89.33	176.82	11208.22	-2112.49	117.47	2115.76	0.00	465166.62	772897.46	
13199.97	89.33	176.82	11209.38	-2212.33	123.02	2215.75	0.00	465066.78	772903.01	
13299.97	89.33	176.82	11210.55	-2312.17	128.57	2315.74	0.00	464966.94	772908.56	
13399.97	89.33	176.82	11211.72	-2412.01	134.12	2415.74	0.00	464867.10	772914.11	
13499.97	89.33	176.82	11212.89	-2511.85	139.67	2515.73	0.00	464767.26	772919.66	
13599.97	89.33	176.82	11214.06	-2611.69	145.22	2615.72	0.00	464667.42	772925.21	
13699.97	89.33	176.82	11215.23	-2711.53	150.78	2715.71	0.00	464567.58	772930.77	
13799.97	89.33	176.82	11216.40	-2811.36	156.33	2815.71	0.00	464467.75	772936.32	
13899.97	89.33	176.82	11217.57	-2911.20	161.88	2915.70	0.00	464367.91	772941.87	
13999.97	89.33	176.82	11218.73	-3011.04	167.43	3015.69	0.00	464268.07	772947.42	
14099.97	89.33	176.82	11219.90	-3110.88	172.98	3115.69	0.00	464168.23	772952.97	
14199.97	89.33	176.82	11221.07	-3210.72	178.53	3215.68	0.00	464068.39	772958.52	
14299.97	89.33	176.82	11222.24	-3310.56	184.08	3315.67	0.00	463968.55	772964.07	
14399.97	89.33	176.82	11223.41	-3410.40	189.64	3415.67	0.00	463868.71	772969.63	
14499.97	89.33	176.82	11224.58	-3510.24	195.19	3515.66	0.00	463768.87	772975.18	
14599.97	89.33	176.82	11225.75	-3610.07	200.74	3615.65	0.00	463669.04	772980.73	
14699.97	89.33	176.82	11226.92	-3709.91	206.29	3715.64	0.00	463569.20	772986.28	
14799.97	89.33	176.82	11228.08	-3809.75	211.84	3815.64	0.00	463469.36	772991.83	
14899.97	89.33	176.82	11229.25	-3909.59	217.39	3915.63	0.00	463369.52	772997.38	
14999.97	89.33	176.82	11230.42	-4009.43	222.95	4015.62	0.00	463269.68	773002.94	
15099.97	89.33	176.82	11231.59	-4109.27	228.50	4115.62	0.00	463169.84	773008.49	
15199.97	89.33	176.82	11232.76	-4209.11	234.05	4215.61	0.00	463070.00	773014.04	
15299.97	89.33	176.82	11233.93	-4308.95	239.60	4315.60	0.00	462970.16	773019.59	
15399.97	89.33	176.82	11235.10	-4408.78	245.15	4415.59	0.00	462870.33	773025.14	
15499.97	89.33	176.82	11236.27	-4508.62	250.70	4515.59	0.00	462770.49	773030.69	
15599.97	89.33	176.82	11237.43	-4608.46	256.26	4615.58	0.00	462670.65	773036.25	
15699.97	89.33	176.82	11238.60	-4708.30	261.81	4715.57	0.00	462570.81	773041.80	
15733.89	89.33	176.82	11239.00	-4742.17	263.69	4749.50	0.00	462536.94	773043.68	PBHL

Weatherford

Weatherford Drilling Services

GeoDec4 v2.0.0.3

Report Date:	March 12, 2014
Job Number:	
Customer:	Devon Energy
Well Name:	Thistle Unit 51H
API Number:	
Rig Name:	
Location:	
Block:	
Engineer:	Patrick Rudolph

NAD83 / New Mexico East (ftUS)	WGS 84
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: WGS 1984
Ellipsoid: GRS 1980	Ellipsoid: WGS 84
EPSG: 2257	EPSG: 4326
North: 467279.11 US Survey Foot	Latitude: 32.282402 Degree
East: 772779.99 US Survey Foot	Longitude: -103.58442 Degree
Convergence: 0.40°	
Declination: 7.37°	
Total Correction: 6.97°	
Datum Transformation: NAD83 to WGS 84 (30)	

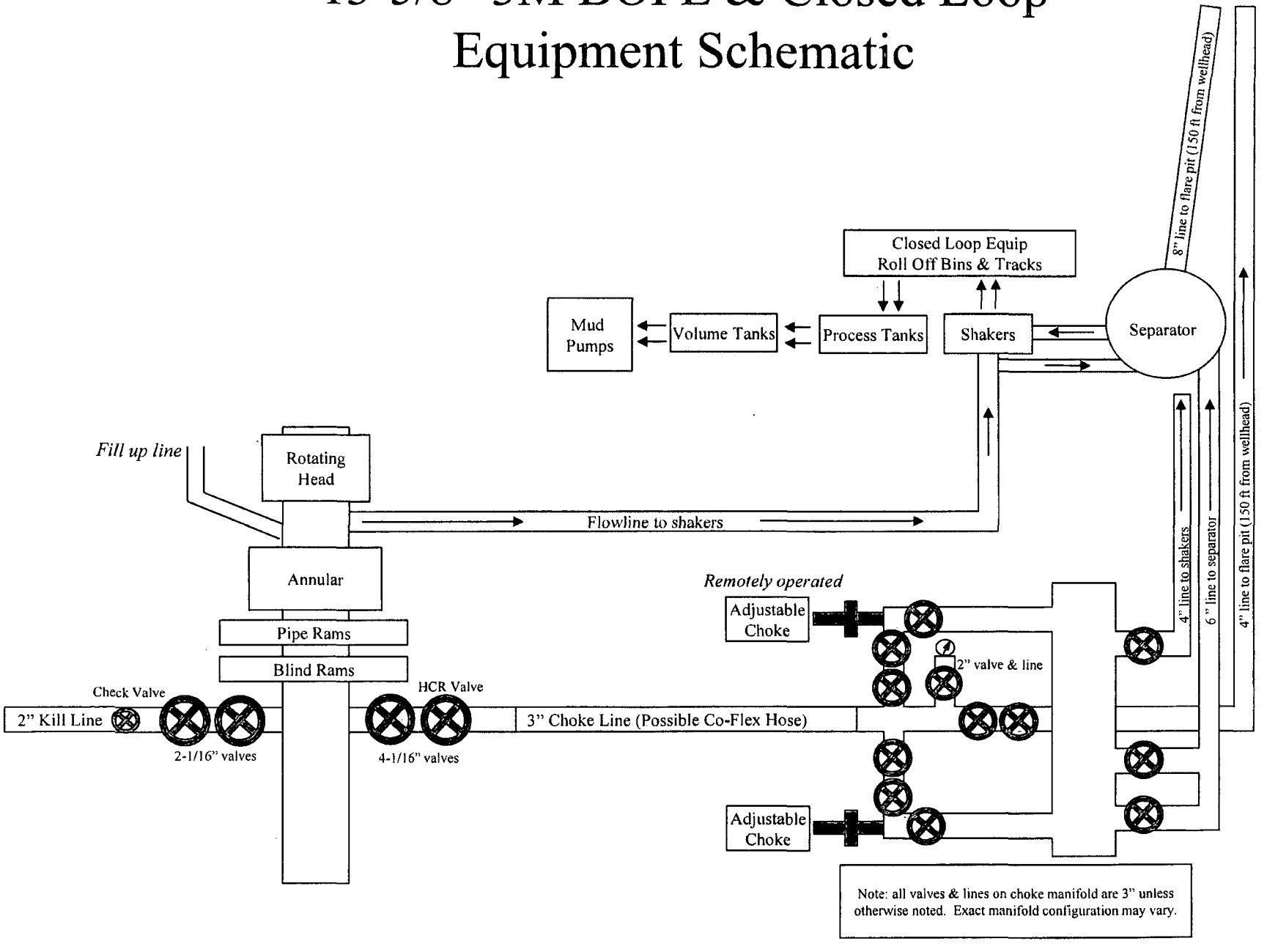
Geodetic Location WGS84

MSL Elevation	=	3337 usft
Latitude	=	32° 16' 56.65" N
Longitude	=	103° 35' 03.91" W

Magnetic Declination	=	7.37 deg	[True North Offset]		
Local Gravity	=	.9988 g	CheckSum	=	6672
Local Field Strength	=	48357 nT	Magnetic Vector X	=	23865 nT
Magnetic Dip	=	60.16 deg	Magnetic Vector Y	=	3087 nT
Magnetic Model	=	bggm2013.COF	Magnetic Vector Z	=	41945 nT
Run Date	=	March 12, 2014	Magnetic Vector H	=	24064 nT

Signed:_____ Date:_____

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



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
Thistle Unit 51H

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 filings will be in operable condition to withstand a minimum of 3000psi working pressure.

4. All fittings will be flanged.

5. A fill bore safety valve tested to a minimum of 3000psi 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.

Continental CONTITECH

Fluid Technology

Quality Document

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	1713	
PURCHASER:	ContiTech Beattie Co.			P.O. N°:	002808	
CONTITECH ORDER N°:	426127	HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	53622	NOMINAL / ACTUAL LENGTH:		10,67 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 = 25 MPa

COUPLINGS Type	Serial N°	Quality	Heat N°
3" coupling with	5503 2029	AISI 4130	N1590P
4 1/16" Flange end		AISI 4130	27566

INFOCHIP INSTALLED

API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

Hose conform to NACE MR 01-75

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
25. August. 2008		ContiTech Rubber Industrial Kft. Quality Control Dept.

ContiTech Rubber Industrial Kft.
Budapesti út 10., Szeged H 6728
P.O.Box 152 Szeged H-6701
Hungary

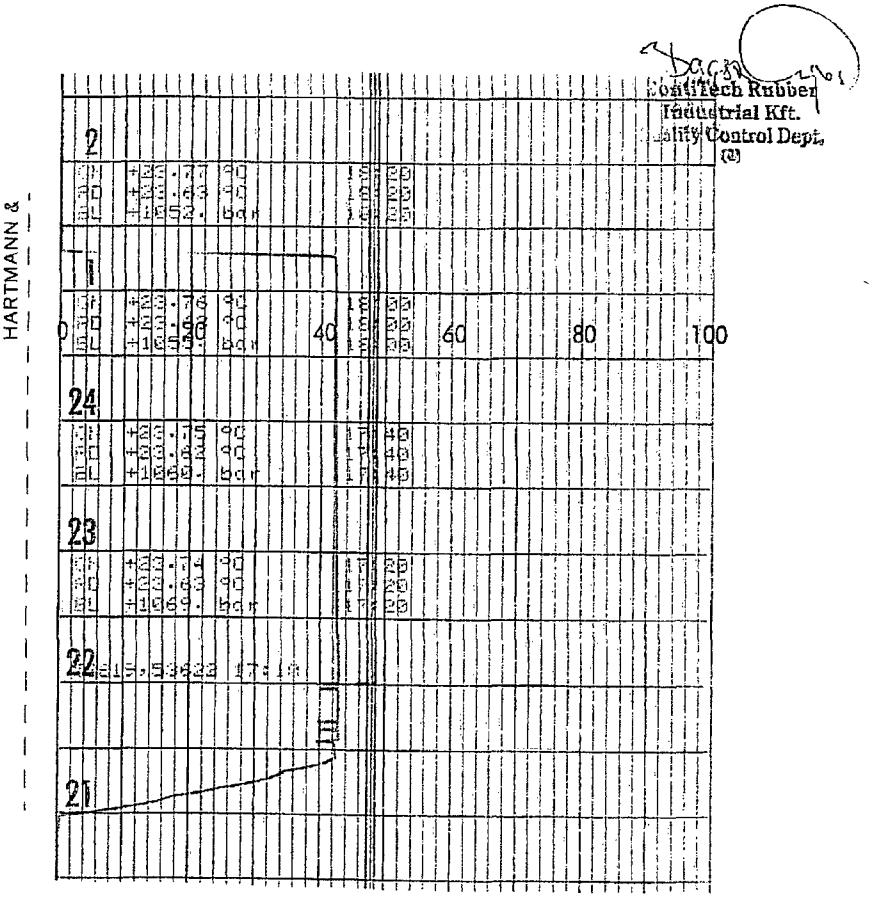
Phone: +36 62 566 737
Fax: +36 62 566 738
e-mail: info@fluid.contitech.hu
Internet: www.contitech-rubber.hu

The Court of Csongrád County as Registry Court
Registry Court No: HU 06-09-002502
EU VAT No: HU11087209

Bank data
Commerzbank Zrt.
Szeged
14220108-26830003-00000000

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE *No 1711,1713*

Page: 1/1



Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: 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 intended and suitable for the application regardless of whether the hose is secured or unsecured in its 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 providing 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.

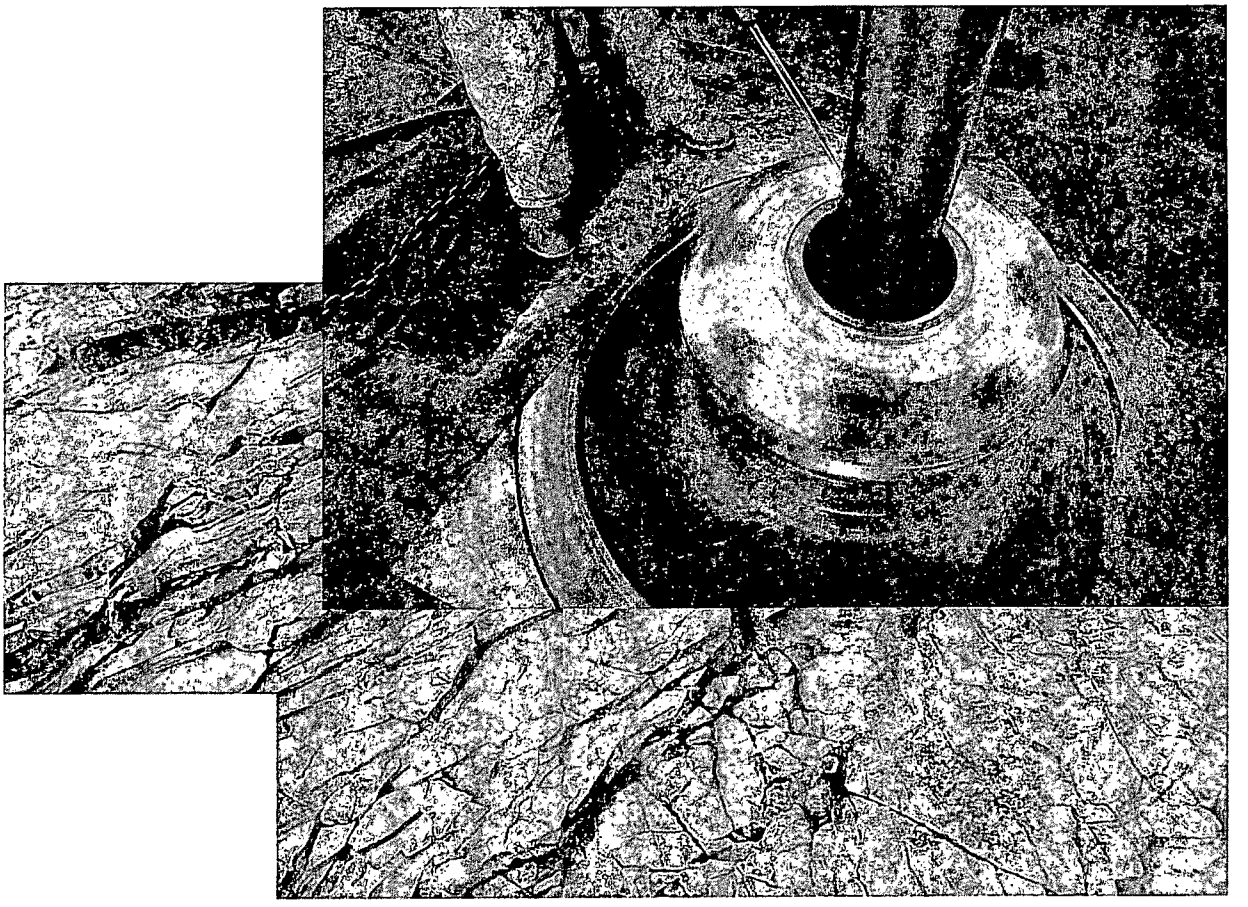
Best regards,

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

devon

Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
February 2014

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS 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.

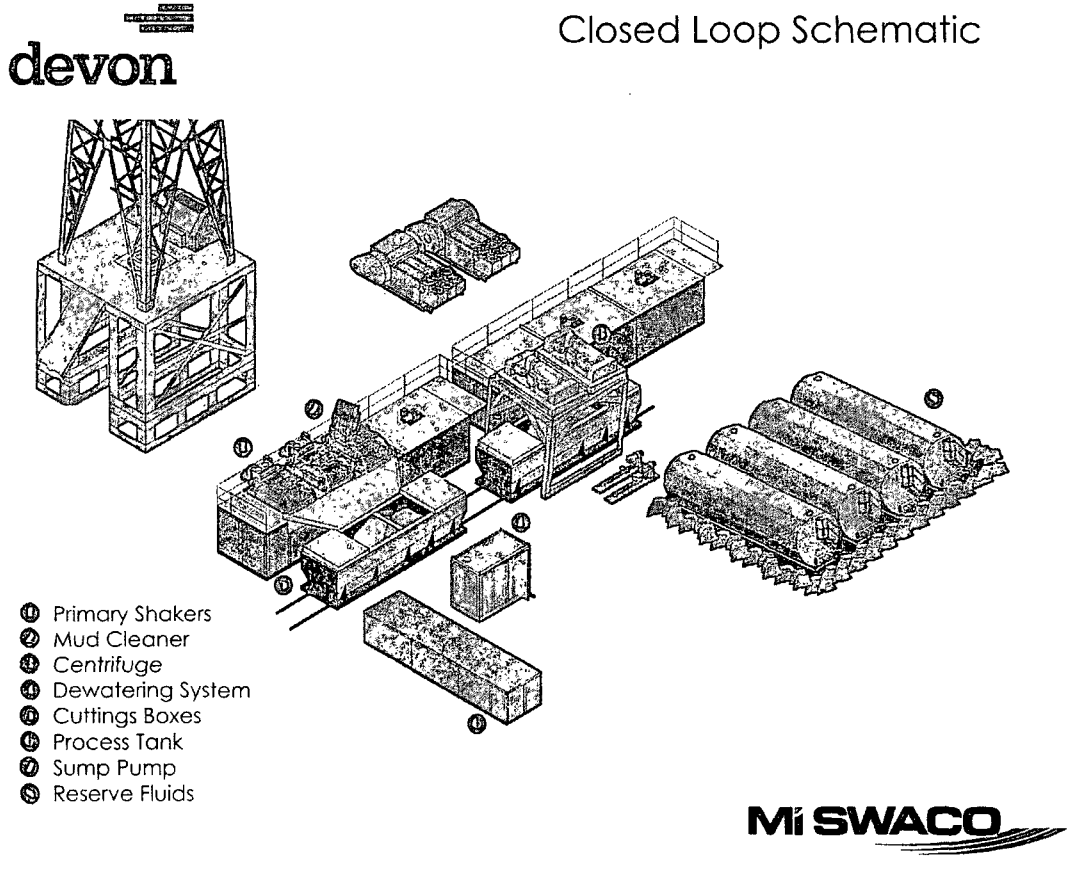
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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.



Centrifuges: The centrifuges can be one or two in number 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 Mi Swaco 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.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' 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.

H&P Flex Rig Location Layout