

OCD-HOBBS

HOBBS OCD

AUG 02 2012

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Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

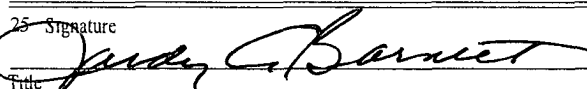
FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

1a. Type of work ☒ DRILL ☐ REENTER		5 Lease Serial No. NMLC-058698B
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
3a. Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260		8 Lease Name and Well No Caswell 23 Federal 3H 39381
3b Phone No. (include area code) 405-228-8699		9 API Well No. 30-025-40709
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 385 FNL & 260 FEL Unit A At proposed prod zone 380 FNL & 330 FWL Unit D PP: 380 FNL & 330 FEL		10 Field and Pool, or Exploratory Maljamar West; Paddock Yes (44500)
11 Sec, T R M or Blk and Survey or Area SEC 23 T17S R32E		12 County or Parish Lea County
13 State NM		14 Distance in miles and direction from nearest town or post office* Approximately 2.5 miles SE of Maljamar, 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 640 Acres	17 Spacing Unit dedicated to this well 160 Acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft See Attached Map	19 Proposed Depth 6580 TVD 11150 MD	20 BLM/BIA Bond No on file CO-1104
21 Elevations (Show whether DF, KDB, RT, GL, etc) 4069' GL	22 Approximate date work will start*	23 Estimated duration 45 days

24. Attachments **To be pad drilled with the Caswell 23 Fed 1H**

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 04/23/2012
Title Regulatory Specialist		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date AUG - 1 2012
Title FOH 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)

Roswell Controlled Water Basin

Ke 06/02/12

Approval Subject to General Requirements
& Special Stipulations Attached

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

DRILLING PROGRAM

Devon Energy Production Company, LP

Caswell 23 Federal 3H

Surface Location: 385' FNL & 260' FEL, Unit A, Sec 23 T17S R32E, Lea, NM

Bottom Hole Location: 380' FNL & 330' FWL, Unit D, Sec 23 T17S 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	0'	
b. Fresh Water	70'	
c. Rustler	1040'	
d. Top of Salt	1199'	
e. Base of Salt	2211'	
f. Yates	2360'	
g. 7 Rivers	2689'	
h. Queen	3280'	
i. Grayburg	3669'	Oil
j. Sand Andres	4072'	Oil
k. Glorieta	5613'	Oil
l. Yeso Group	5680'	Oil

Total Depth 11,150'

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 13 3/8" casing at 1,000' and circulating cement back to surface. Fresh water sands will be protected by setting 9 5/8" casing at 2,500' 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 (All casing is new and API approved)

See COA

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17-1/2"	0 - 1,000'	13-3/8"	0 - 1,000'	48#	STC	H-40
12-1/4"	1,000' - 2,500'	9-5/8"	0 - 2,500'	40#	LTC	J-55
8-3/4"	2,500' - 6,130'	5-1/2"	0 - 6,130'	17#	LTC	L-80
8-3/4"	6,130' - 11,150'	5-1/2"	6,130 - 11,150'	17#	BTC	L-80

MAX TVD: 6,702 FT

Design Factors

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8"	1.8	4.1	7.5
9-5/8"	2.0	3.0	5.2
5-1/2" LTC	1.9	2.7	1.8
5-1/2" BTC	1.9	2.4	2.3

3. Cement Program: (Cementing Program (cement volumes based on at least 25% excess))

- a. 13 3/8" Surface **Lead** w/ 960 sx HalCem-C + 2% Calcium Chloride-Flake + 0.25 #/sx Poly-E-Flake. 14.8 ppg. Yield 1.35 cf/sx. TOC @ surface.
- b. 9 5/8" Intermediate **Lead** w/ 465 sx EconoCem-HLC + 5% Sodium Chloride + 0.125#/sx Poly-E-Flake, 12.5 ppg. Yield 2.04 cf/sx. TOC @ surface.
- Tail** w/ 220 sx HalCem-C + 0.125#/sx Poly-E-Flake, 14.8 ppg. Yield 1.33 cf/sx.
- c. 5 1/2" Production **1st Lead** w/ 130 sx EconCem-H + 0.125 #/sx Poly-E-Flake + 0.1% HR-601 + 0.5% Econolite, 11.8 ppg. Yield 2.52 cf/sx.
- 2nd Lead** w/610 sx EconoCem-HLH + 0.125 #/sx Poly-E-Flake + 0.1 % HR-601, 12.5 ppg. Yield 1.95 cf/sx.
- Tail** w/ 610 sx SoluCem-H + 0.25 #/sx D-AIR 5000 + 0.5% HR-601, 15.0 ppg. Yield 2.62 cf/sx.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach approximately 500' above the 9 5/8" casing shoe.

Pressure Control Equipment

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 5M Double 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 casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 5M Double 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 intermediate 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.

Mud Program

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 - 1,000' 1045	8.4 - 9.0	30 - 34	N/C	FW
1,000' - 2,500' 1575	9.8 - 10.0	28 - 32	N/C	Brine
2,500' - 11,150'	8.6 - 9.0	28 - 32	N/C-12	FW

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

4. 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 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.

5. 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.

6. 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 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 3100 psi and Estimated BHT 117°. No H₂S is anticipated to be encountered.

7. 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 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.

Devon Energy Corporation

Lea County, NM (NAD 83)

Caswell 23 Federal

Caswell 23 Federal 3H

Wellbore #1

Plan: Plan #1

Sperry Drilling Services Proposal Report

12 April, 2012

Well Coordinates 664,852 50 N, 726,872 73 E (32° 49' 34 50" N, 103° 43' 45 61" W)

Ground Level 4,069 30 ft

Local Coordinate Origin

Centered on Well Caswell 23 Federal 3H

Viewing Datum

GL 4069 30' + KB 25' @ 4094 30ft (Cactus 126)

TVDs to System

N

North Reference

Grid

Unit System

API - US Survey Feet

Version 2003 16 Build 43I

HALLIBURTON

HALLIBURTON**Plan Report for Caswell 23 Federal 3H - Plan #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
70 00	0 00	0 00	70 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Water Sand										
100 00	0 00	0 00	100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
200 00	0 00	0 00	200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
300 00	0 00	0 00	300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
400 00	0 00	0 00	400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
500 00	0 00	0 00	500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
600 00	0 00	0 00	600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
700 00	0 00	0 00	700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
800 00	0 00	0 00	800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
900 00	0 00	0 00	900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
954 00	0 00	0 00	954 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Top of Salt(Rustler)										
1,000 00	0 00	0 00	1,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,100 00	0 00	0 00	1,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,200 00	0 00	0 00	1,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,300 00	0 00	0 00	1,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,400 00	0 00	0 00	1,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,500 00	0 00	0 00	1,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,600 00	0 00	0 00	1,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,700 00	0 00	0 00	1,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,800 00	0 00	0 00	1,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,900 00	0 00	0 00	1,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,100 00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,211 00	0 00	0 00	2,211 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Base of Salt(Tansill)										
2,300 00	0 00	0 00	2,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,360 00	0 00	0 00	2,360 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Yates										
2,400 00	0 00	0 00	2,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,500 00	0 00	0 00	2,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,600 00	0 00	0 00	2,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,689 00	0 00	0 00	2,689 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
7 Rivers										
2,700 00	0 00	0 00	2,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,800 00	0 00	0 00	2,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,900 00	0 00	0 00	2,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,000 00	0 00	0 00	3,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,100 00	0 00	0 00	3,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,200 00	0 00	0 00	3,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,280 00	0 00	0 00	3,280 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Queen										
3,300 00	0 00	0 00	3,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,400 00	0 00	0 00	3,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,500 00	0 00	0 00	3,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,600 00	0 00	0 00	3,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,669 00	0 00	0 00	3,669 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Grayburg										
3,700 00	0 00	0 00	3,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,800 00	0 00	0 00	3,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,900 00	0 00	0 00	3,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,000 00	0 00	0 00	4,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,072 00	0 00	0 00	4,072 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Sand Andres										
4,100 00	0 00	0 00	4,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00

HALLIBURTON**Plan Report for Caswell 23 Federal 3H - Plan #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,200.00	0 00	0 00	4,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,300 00	0 00	0 00	4,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,400 00	0 00	0 00	4,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,500 00	0 00	0 00	4,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,600 00	0 00	0 00	4,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,700 00	0 00	0 00	4,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,800 00	0 00	0 00	4,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,900 00	0 00	0 00	4,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,000 00	0 00	0 00	5,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,100 00	0 00	0 00	5,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,200 00	0 00	0 00	5,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,300 00	0 00	0 00	5,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,400 00	0 00	0 00	5,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,500 00	0 00	0 00	5,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,600 00	0 00	0 00	5,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,613 00	0 00	0 00	5,613 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Glorieta										
5,680 00	0 00	0 00	5,680 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Yeso Group										
5,700 00	0 00	0 00	5,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,800 00	0 00	0 00	5,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
5,900 00	0 00	0 00	5,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
6,000 00	0 00	0 00	6,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
6,100 00	0 00	0 00	6,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
6,129 30	0 00	0 00	6,129 30	0 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP/Start Build @ 6129.30' MD - Build Rate = 10.00°/100'										
6,150 00	2 07	269 85	6,150 00	0 00	-0 37	0 37	10 00	10 00	0 00	269 85
6,200 00	7 07	269 85	6,199 82	-0 01	-4 36	4 36	10 00	10 00	0 00	0 00
6,250 00	12 07	269 85	6,249 11	-0 03	-12 67	12 67	10 00	10 00	0 00	0 00
6,300 00	17 07	269 85	6,297 49	-0 07	-25 24	25 24	10 00	10 00	0 00	0 00
6,350 00	22 07	269 85	6,344 58	-0 11	-41 98	41 98	10 00	10 00	0 00	0 00
6,400 00	27 07	269 85	6,390 04	-0 16	-62 77	62 77	10 00	10 00	0 00	0 00
6,450 00	32 07	269 85	6,433 51	-0 23	-87 44	87 44	10 00	10 00	0 00	0 00
6,500 00	37 07	269 85	6,474 67	-0 30	-115 80	115 80	10 00	10 00	0 00	0 00
6,550 00	42 07	269 85	6,513.20	-0 39	-147 64	147 64	10 00	10 00	0 00	0 00
6,600 00	47 07	269 85	6,548 81	-0 48	-182 72	182.72	10 00	10 00	0 00	0 00
6,650 00	52 07	269 85	6,581 23	-0 58	-220 76	220 77	10 00	10 00	0 00	0 00
6,700 00	57 07	269 85	6,610 20	-0 69	-261 49	261 49	10 00	10 00	0 00	0 00
6,750 00	62 07	269 85	6,635 52	-0 80	-304 59	304 59	10 00	10 00	0 00	0 00
6,800 00	67 07	269 85	6,656 98	-0 92	-349 73	349 73	10 00	10 00	0 00	0 00
6,850 00	72 07	269 85	6,674 43	-1 04	-396 57	396 57	10 00	10 00	0 00	0 00
6,900 00	77 07	269 85	6,687 73	-1 17	-444 76	444 76	10 00	10 00	0 00	0 00
6,950 00	82 07	269 85	6,696 78	-1 30	-493 91	493 92	10 00	10 00	0 00	0 00
7,000 00	87 07	269 85	6,701 50	-1 43	-543 67	543 67	10 00	10 00	0 00	0 00
7,046 33	91 70	269 85	6,702.00	-1 55	-589 99	589 99	10 00	10 00	0 00	0 00
End Build @ 7046.33' MD - Hold Angle = 91.70°										
7,100 00	91 70	269 85	6,700 40	-1 69	-643 63	643 64	0 00	0 00	0 00	0 00
7,200 00	91 70	269 85	6,697 43	-1 95	-743 59	743 59	0 00	0 00	0 00	0 00
7,300 00	91 70	269 85	6,694 46	-2 21	-843 54	843 55	0 00	0 00	0 00	0 00
7,400 00	91 70	269 85	6,691 49	-2 48	-943 50	943 50	0 00	0 00	0 00	0 00
7,500 00	91 70	269 85	6,688 51	-2 74	-1,043 46	1,043 46	0 00	0 00	0 00	0 00
7,600 00	91 70	269 85	6,685 54	-3 00	-1,143 41	1,143 41	0 00	0 00	0 00	0 00
7,700 00	91 70	269 85	6,682 57	-3 26	-1,243 37	1,243 37	0 00	0 00	0 00	0 00
7,800 00	91 70	269 85	6,679 60	-3 53	-1,343 32	1,343 33	0 00	0 00	0 00	0 00
7,900 00	91 70	269 85	6,676 62	-3 79	-1,443 28	1,443 28	0 00	0 00	0 00	0 00
8,000 00	91 70	269 85	6,673 65	-4 05	-1,543 23	1,543 24	0 00	0 00	0 00	0 00
8,100 00	91 70	269 85	6,670 68	-4 31	-1,643 19	1,643 19	0 00	0 00	0 00	0 00
8,200 00	91 70	269 85	6,667 70	-4 58	-1,743 14	1,743 15	0 00	0 00	0 00	0 00
8,300 00	91 70	269 85	6,664 73	-4 84	-1,843 10	1,843 11	0 00	0 00	0 00	0 00

HALLIBURTON**Plan Report for Caswell 23 Federal 3H - Plan #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
8,400.00	91 70	269 85	6,661.76	-5 10	-1,943 05	1,943.06	0.00	0 00	0 00	0.00
8,500.00	91 70	269 85	6,658.79	-5 36	-2,043 01	2,043.02	0.00	0 00	0 00	0.00
8,600.00	91 70	269 85	6,655.81	-5 63	-2,142 97	2,142.97	0.00	0.00	0 00	0.00
8,700.00	91 70	269 85	6,652.84	-5 89	-2,242 92	2,242.93	0.00	0.00	0 00	0.00
8,800.00	91 70	269 85	6,649.87	-6 15	-2,342 88	2,342.88	0.00	0.00	0 00	0.00
8,900.00	91 70	269 85	6,646.90	-6 41	-2,442 83	2,442.84	0.00	0.00	0 00	0.00
9,000.00	91 70	269 85	6,643.92	-6 68	-2,542 79	2,542.80	0.00	0.00	0 00	0.00
9,100.00	91 70	269 85	6,640.95	-6 94	-2,642 74	2,642.75	0.00	0.00	0 00	0.00
9,200.00	91 70	269 85	6,637.98	-7 20	-2,742 70	2,742.71	0.00	0.00	0 00	0.00
9,300.00	91 70	269 85	6,635.00	-7 46	-2,842 65	2,842.66	0.00	0.00	0 00	0.00
9,400.00	91 70	269 85	6,632.03	-7 73	-2,942 61	2,942.62	0.00	0.00	0 00	0.00
9,500.00	91 70	269 85	6,629.06	-7 99	-3,042 56	3,042.58	0.00	0.00	0 00	0.00
9,600.00	91 70	269 85	6,626.09	-8 25	-3,142 52	3,142.53	0.00	0.00	0 00	0.00
9,700.00	91 70	269 85	6,623.11	-8 51	-3,242 48	3,242.49	0.00	0.00	0 00	0.00
9,800.00	91 70	269 85	6,620.14	-8 78	-3,342 43	3,342.44	0.00	0.00	0 00	0.00
9,900.00	91 70	269 85	6,617.17	-9 04	-3,442 39	3,442.40	0.00	0.00	0 00	0.00
10,000.00	91 70	269 85	6,614.20	-9 30	-3,542 34	3,542.35	0.00	0.00	0 00	0.00
10,100.00	91 70	269 85	6,611.22	-9 56	-3,642 30	3,642.31	0.00	0.00	0 00	0.00
10,200.00	91 70	269 85	6,608.25	-9 83	-3,742 25	3,742.27	0.00	0.00	0 00	0.00
10,300.00	91 70	269 85	6,605.28	-10 09	-3,842 21	3,842.22	0.00	0.00	0 00	0.00
10,400.00	91 70	269 85	6,602.30	-10 35	-3,942 16	3,942.18	0.00	0.00	0 00	0.00
10,500.00	91 70	269 85	6,599.33	-10 61	-4,042 12	4,042.13	0.00	0.00	0 00	0.00
10,600.00	91 70	269 85	6,596.36	-10 88	-4,142 07	4,142.09	0.00	0.00	0 00	0.00
10,700.00	91 70	269 85	6,593.39	-11 14	-4,242 03	4,242.04	0.00	0.00	0 00	0.00
10,800.00	91 70	269 85	6,590.41	-11 40	-4,341 99	4,342.00	0.00	0.00	0 00	0.00
10,900.00	91 70	269 85	6,587.44	-11 66	-4,441 94	4,441.96	0.00	0.00	0 00	0.00
11,000.00	91 70	269 85	6,584.47	-11 93	-4,541 90	4,541.91	0.00	0.00	0 00	0.00
11,100.00	91 70	269 85	6,581.50	-12 19	-4,641.85	4,641.87	0.00	0.00	0 00	0.00
11,150.31	91 70	269 85	6,580.00	-12 32	-4,692.14	4,692.16	0.00	0.00	0 00	0.00

TD @ 11150.31' MD - Caswell 23 Federal 3H / BHL

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,129.30	6,129.30	0.00	0.00	KOP/Start Build @ 6129.30' MD
6,129.30	6,129.30	0.00	0.00	Build Rate = 10.00°/100'
7,046.33	6,702.00	-1.55	-589.99	End Build @ 7046.33' MD
7,046.33	6,702.00	-1.55	-589.99	Hold Angle = 91.70°
11,150.31	6,580.00	-12.32	-4,692.14	TD @ 11150.31' MD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	269.85	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,150.05	Plan #1	MWD

HALLIBURTON**North Reference Sheet for Caswell 23 Federal - Caswell 23 Federal 3H - Wellbore****#1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL 4069 30' + KB 25' @ 4094 30ft (Cactus 126). Northing and Easting are relative to Caswell 23 Federal 3H.

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980.

Projection method is Transverse Mercator (Gauss-Kruger).

Central Meridian is -104 33°, Longitude Origin 0° 0' 0 000 E°, Latitude Origin 0° 0' 0 000 N°.

False Easting 541,337 50ft, False Northing 0 00ft, Scale Reduction 0.99994851.

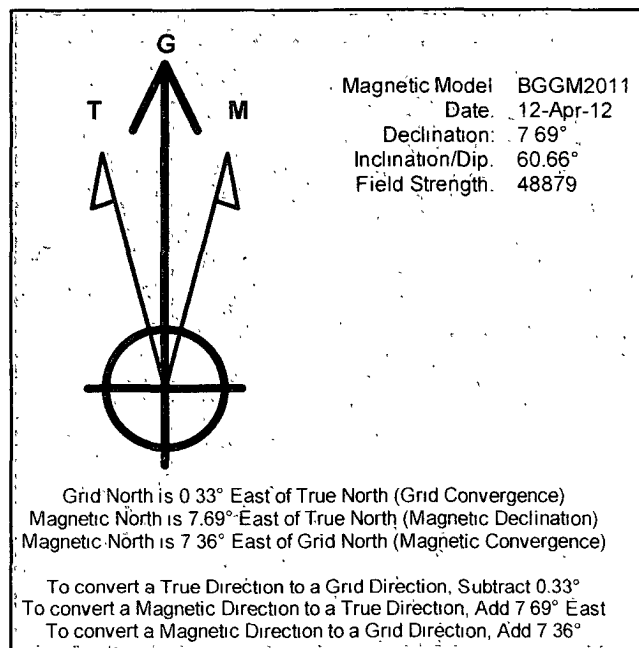
Grid Coordinates of Well: 664,852 50 ft N, 726,872 73 ft E.

Geographical Coordinates of Well: 32° 49' 34 50" N, 103° 43' 45 61" W.

Grid Convergence at Surface is 0.33°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,150 31ft the Bottom Hole Displacement is 4,692 16ft in the Direction of 269.85° (Grid).

Magnetic Convergence at surface is -7.36° (12 April 2012, BGGM2011).





Project: Lea County, NM (NAD 83)
 Site: Caswell 23 Federal
 Well: Caswell 23 Federal 3H
 Wellbore: Wellbore #1
 Plan: Plan #1
 Rig: Cactus 126

SURFACE LOCATION

US State Plane 1983
 New Mexico Eastern Zone
 Elevation GL 4069 30' + KB 25' @ 4094.30ft (Cactus 126)
 Northing 664852.50
 Easting 726872.73
 Latitude 32° 49' 34.498 N
 Longitude 103° 43' 45.606 W

To convert a Magnetic Direction to a Grid Direction, Add 7.36°

Magnetic Model BGGM2011 Date 12-Apr-12
 Azimuths to Grid North

West(-)/East(+) (600 ft/m)



Unit Lines

South(-)/North(+) (600 ft/m)

South(-)/North(+) (600 ft/m)

Caswell 23 Federal 1HP1

Caswell 23 Federal 1H

Caswell 23 Federal 3H

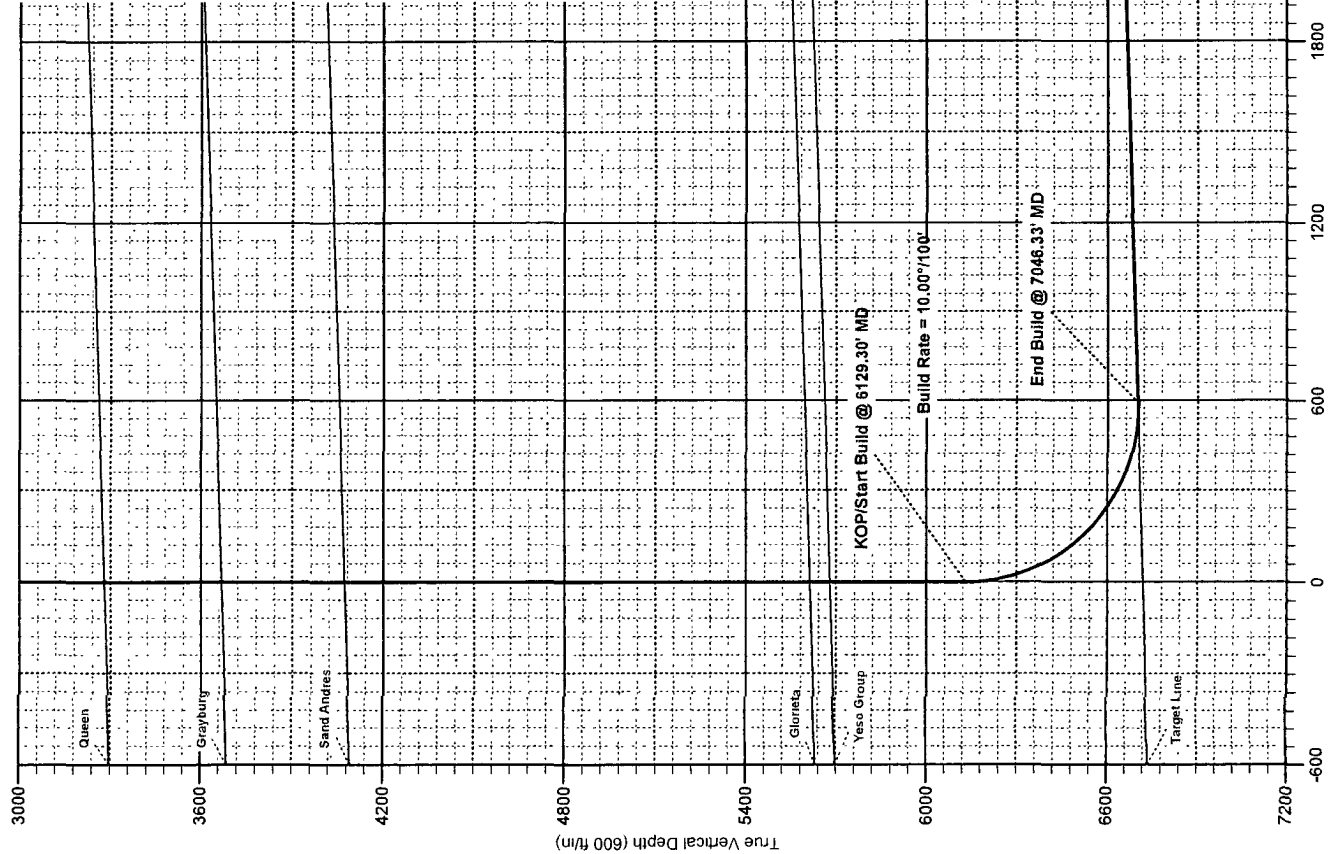
TD @ 11150.31' MD
 Caswell 23 Federal 3H / BHL

End Build @ 7046.33' MD

KOP/Start Build @ 6129.30' MD

West(-)/East(+) (600 ft/m)

Created By Gustavo Moya Date 16 May April 12 2012



Project: Lea County, NM (NAD 83)
 Site: Caswell 23 Federal
 Well: Caswell 23 Federal 3H
 Wellbore: Wellbore #1
 Plan: Plan #1
 Rig: Cactus 126

SURFACE LOCATION

US State Plane 1983
 New Mexico Eastern Zone
 Elevation GL 4089.30' + KB 25' @ 4094.30ft (Cactus 126)
 Northing 664852.50
 Easting 726872.73
 Latitude 32° 49' 34.498 N
 Longitude 103° 43' 45.606 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6129.30	0.00	0.00	6129.30	0.00	0.00	0.00	0.00	0.00	KOP/Start Build
7046.33	91.70	269.85	6702.00	-1.55	-589.99	10.00	269.85	589.99	End Build
11150.31	91.70	269.85	6580.00	-12.32	-4692.14	0.00	0.00	4692.16	TD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

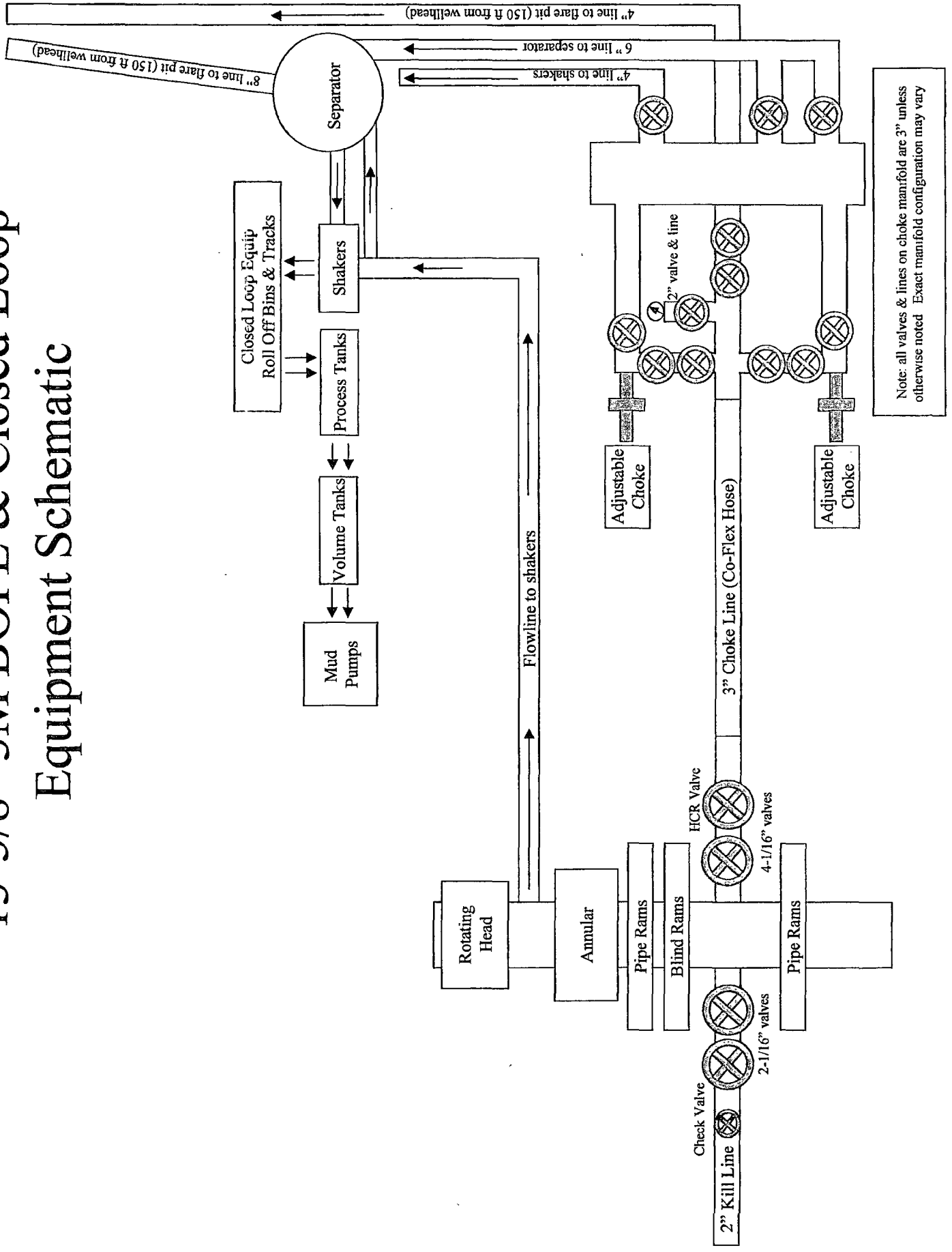
Name	TVD	+N/S	+E/W	Northing	Easting	Shape
Caswell 23 Federal 3H / BHL	6580.00	-12.32	-4692.14	664840.18	722180.59	Point



To convert a Magnetic Direction to a Grid Direction, Add 7.36°

Magnetic Model: BGGM2011 Date: 12-Apr-12
 Azimuths to Grid North

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



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP

Caswell 23 Federal 3H

Surface Location: 385' FNL & 260' FEL, Unit A, Sec 23 T17S R32E, Lea, NM

Bottom Hole Location: 380' FNL & 330' FWL, Unit D, Sec 23 T17S 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 3000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3000 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.



Midwest Hose
& Specialty, Inc.

Friday, March 30, 2012

Subject: Drilling and Production Hoses

Cactus Drilling,

As a manufacturer of high pressure hose assemblies for use in production and drilling, we offer lifting and safety equipment. The lifting and handling equipment on each assembly provides hose longevity and ensures correct handling methods if procedures are followed.

In no way does the lifting and safety equipment affect the performance of the hose assembly providing the hose assembly has been handled and installed correctly. It is recommended to use lifting and safety equipment but not mandatory. A Midwest Hose hose assembly performs as intended regardless of whether lifting and safety equipment is used.

Midwest Hose has 18 locations throughout the United States in all the major oil and gas areas.

Should you have any questions or need any additional information please do not hesitate to contact us.

Best Regards,

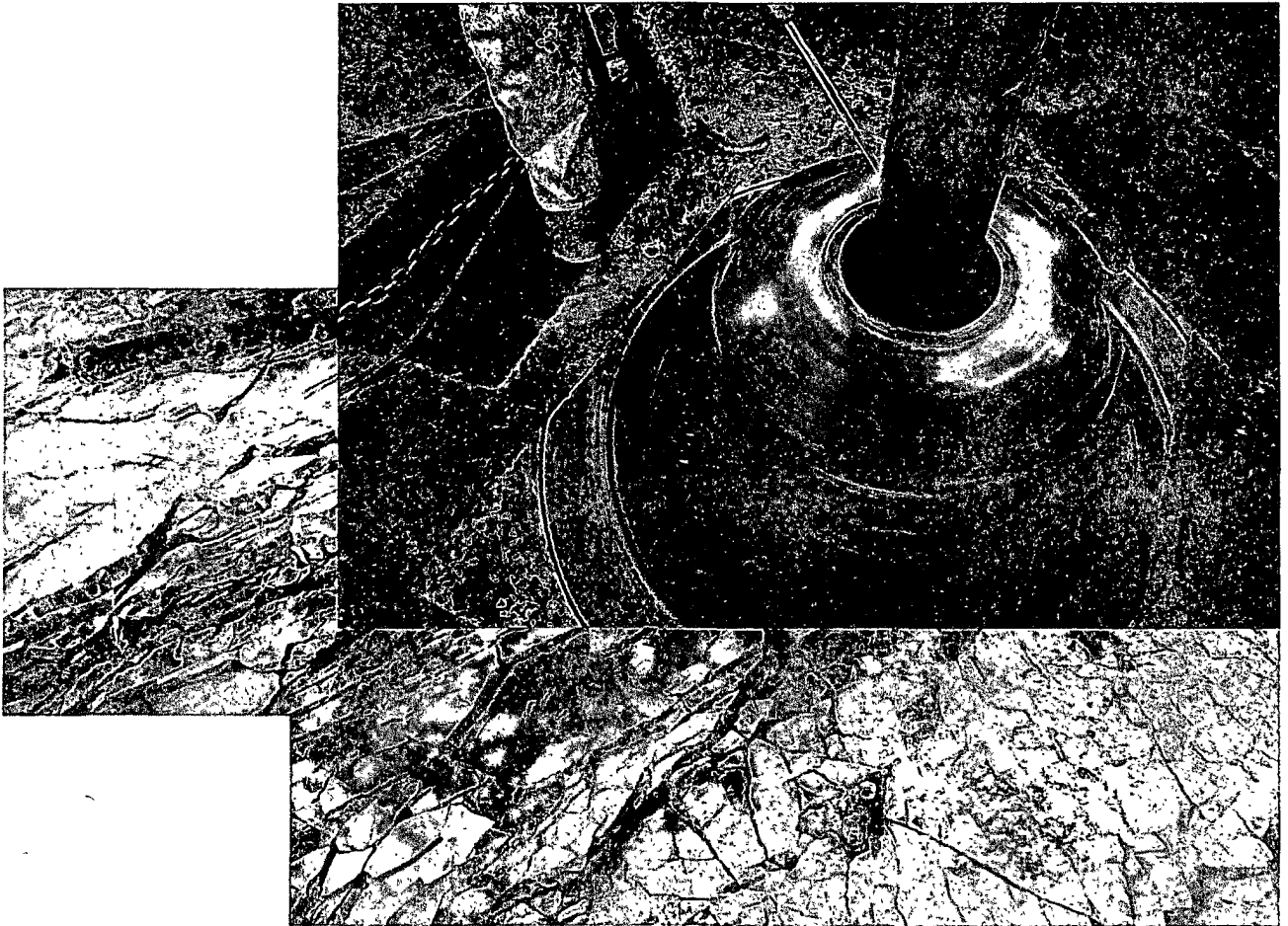
Harvey Sparkman
Midwest Hose & Specialty, Inc.
President and CEO

M I D W E S T
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: ASSET#M10745 SO#71884	
HOSE SPECIFICATIONS			
Type: CHOK & KILL		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE PSI	
COUPLINGS			
Type of End Fitting E4.0X64WB			
Type of Coupling: 4 1/16 10K FLANGE			
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 1 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: S/N#71884 ASSET#M10745			
Date: 3/1/2011	Tested By: BOBBY FINK	Approved: MENDI JACKSON	



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

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.

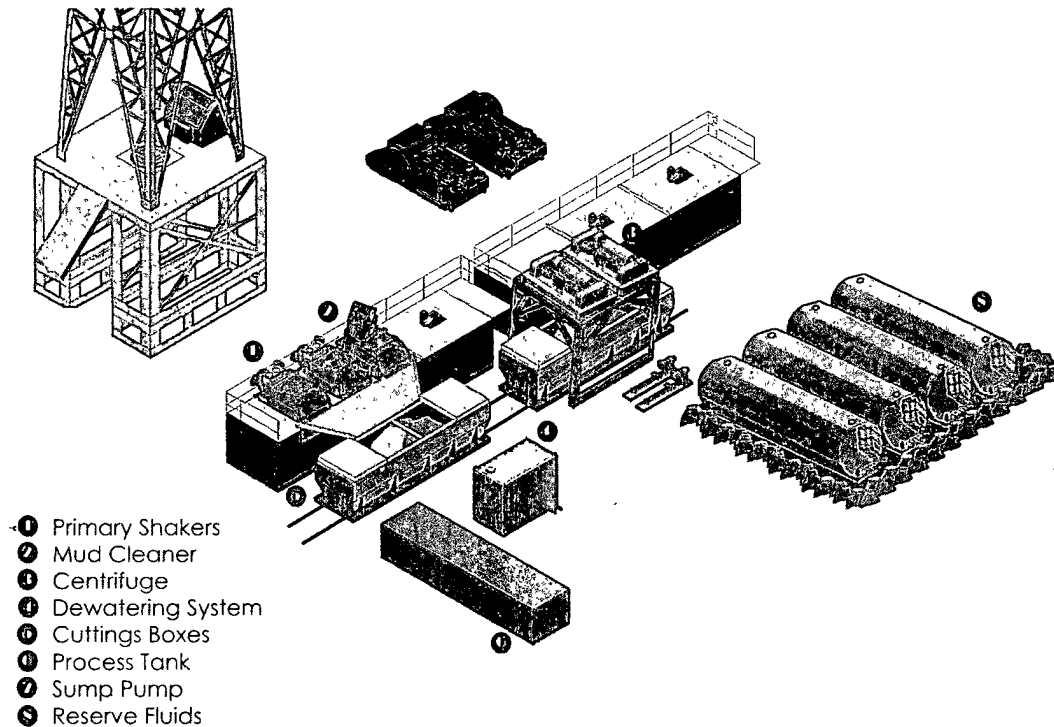
II. Operations and Maintenance Plan

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.



Closed Loop Schematic



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

2 Well Pad

