AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

11/01/2017

APD ID: 10400005902 **Submission Date:** 01/03/2017

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	UNKNOWN	3472	0	0	OTHER : Surface	NONE	No
2	RUSTLER	1906	1566	1566	ANHYDRITE	NATURAL GAS,OIL	No
3	TOP OF SALT	1656	1816	1816	SALT	NONE	No
4	BASE OF SALT	-128	3600	3600	SALT	NONE	No
5	CAPITAN REEF	-607	4079	4079	LIMESTONE	NONE	No
6	DELAWARE	-1696	5168	5168	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON LOWER	-4848	8320	8320	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING LIME	-5043	8515	8515	LIMESTONE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-6069	9541	9541	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING LIME	-6369	9841	9841	LIMESTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-6646	10118	10118	SANDSTONE	NATURAL GAS,OIL	No
12	BONE SPRING 3RD	-7107	10579	10579	LIMESTONE	NATURAL GAS,OIL	No
13	BONE SPRING 3RD	-7640	11112	11112	SANDSTONE	NATURAL GAS,OIL	Yes
14	WOLFCAMP	-7969	11441	11441	SHALE	NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

Pressure Rating (PSI): 5M **Rating Depth:** 5000

Equipment: 5M rotating head, mud-gas separator, panic line,and flare will be rigged up prior to drilling out surface casing.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Testing Procedure: A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. • Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. • Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. 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.

Choke Diagram Attachment:

Gaucho Unit 81H_5M BOPE Double Ram and CLS Schematic_09-19-2016.pdf

BOP Diagram Attachment:

Gaucho Unit 81H_5M BOPE Double Ram and CLS Schematic_09-19-2016.pdf

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Pressure Rating (PSI): 5M **Rating Depth:** 11461

Equipment: 5M rotating head, mud-gas separator, panic line,and flare will be rigged up prior to drilling out surface casing.

Requesting Variance? YES

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BOP Diagram Attachment:

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Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1600	0	1600	-7989	-9589	1600	H-40	48	STC	1.18	2.64	BUOY	8.05	BUOY	8.05
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5000	0	5000	-7989	-12989	5000	J-55	40	OTHER - BTC	1.15	1.77	BUOY	3.98	BUOY	3.98
3	INTERMEDIATE	12.25	9.625	NEW	API	N	4300	5000	4300	5000	-12289	-12989	700	HCK-55	40	OTHER - BTC	1.58	1.47	BUOY	4.5	BUOY	4.5
4	PRODUCTION	8.75	5.5	NEW	API	N	0	16342	0	11461	-7989	-19450	16342	P-110	17	OTHER - BTC	1.56	1.93	BUOY	2.09	BUOY	2.09

Casing Attachments

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho Unit 81H_Surface Casing Assumptions_12-20-2016.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho Unit 81H_Intermediate Casing Assumptions_12-20-2016.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho Unit 81H_Intermediate Casing Assumptions_12-20-2016.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Gaucho Unit 81H_Production Casing Assumptions_12-20-2016.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	800	180	1.85	12.9	326	30	C	Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake
INTERMEDIATE	Tail		800	1800	310	1.33	14.8	407	30	C	0.125 lbs/sks Poly-R-Flake
SURFACE	Lead		0	1600	1245	1.34	14.8	1667	50	C	1% Calcium Chloride
INTERMEDIATE	Lead	1800	0	4000	880	1.85	12.9	1629	30	C	Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sks Poly-E-Flake
INTERMEDIATE	Tail		4000	5000	310	1.33	14.8	407	30	C	0.125 lbs/sks Poly-R-Flake
PRODUCTION	Lead		4800	11200	1155	2.31	11.9	2667	25	H	Poz (Fly Ash) + 0.3% BWOC HR-601 + 10% bwoc Bentonite
PRODUCTION	Tail		11200	16342	1195	1.2	14.5	1429	25	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 +

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											2% bwoc Bentonite

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1600	WATER-BASED MUD	8.4	8.5				2			
1600	5000	SALT SATURATED	9.8	10				2			
5000	16342	LSND/GEL	8.4	9				12			

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: GAUCHO UNIT **Well Number:** 81H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.

List of open and cased hole logs run in the well:

GR

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5006 **Anticipated Surface Pressure:** 2484.58

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Gaucho Unit 81H_H2S Plan_09-19-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Gaucho Unit 81H_Directional Plan_09-19-2016.pdf

Other proposed operations facets description:

MULTI-BOWL VERBIAGE
MULTI-BOWL WELLHEAD
CLOSED-LOOP DESIGN PLAN
ANTICOLLISION PLAN

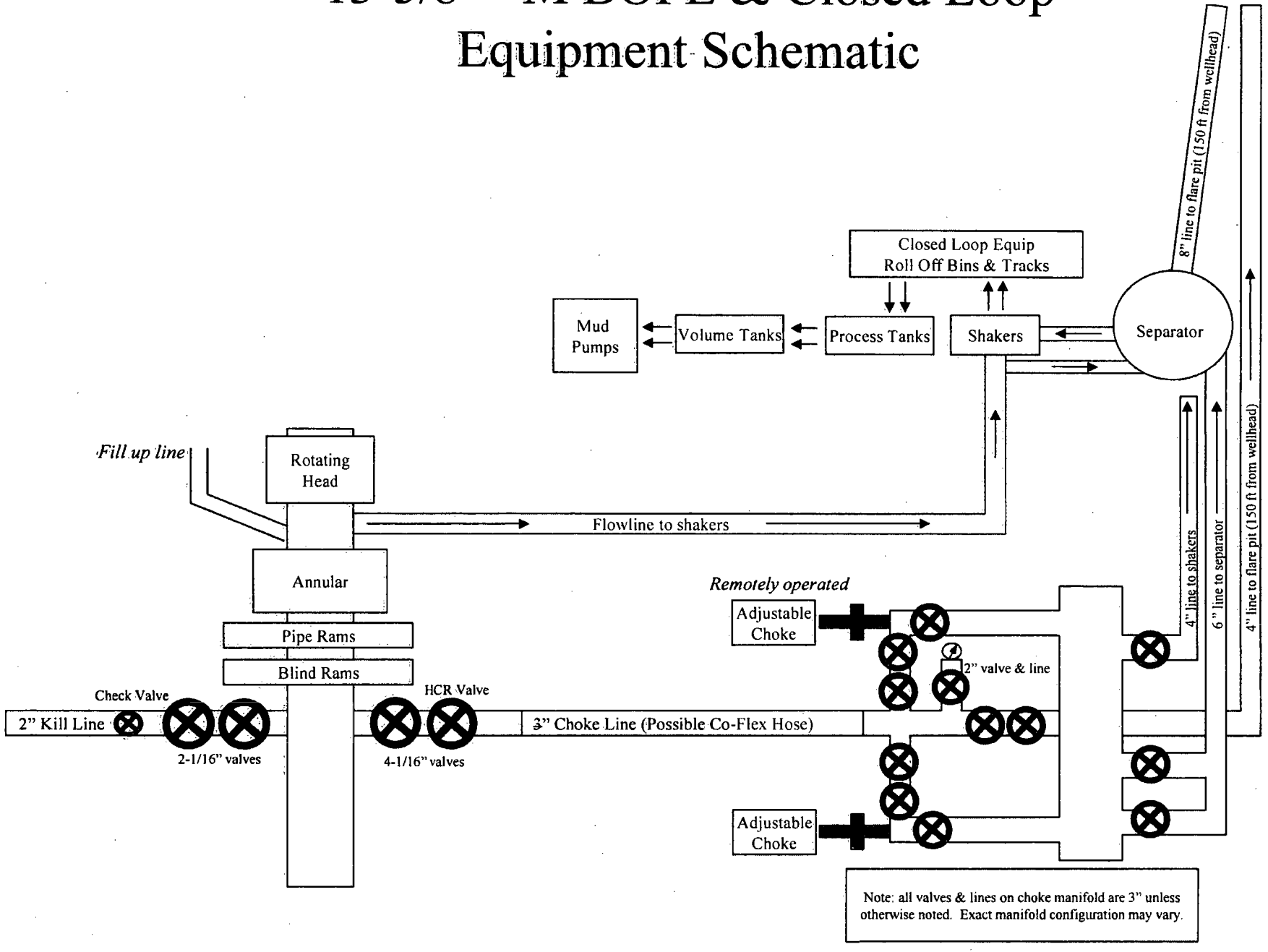
Other proposed operations facets attachment:

Gaucho Unit 81H_Multi-Bowl Verbiage_3M_09-19-2016.pdf
Gaucho Unit 81H_Closed Loop Design Plan_09-19-2016.pdf
Gaucho Unit 81H_Multi-Bowl Wellhead_09-19-2016.pdf
Gaucho Unit 81H_AC Report_09-19-2016.pdf

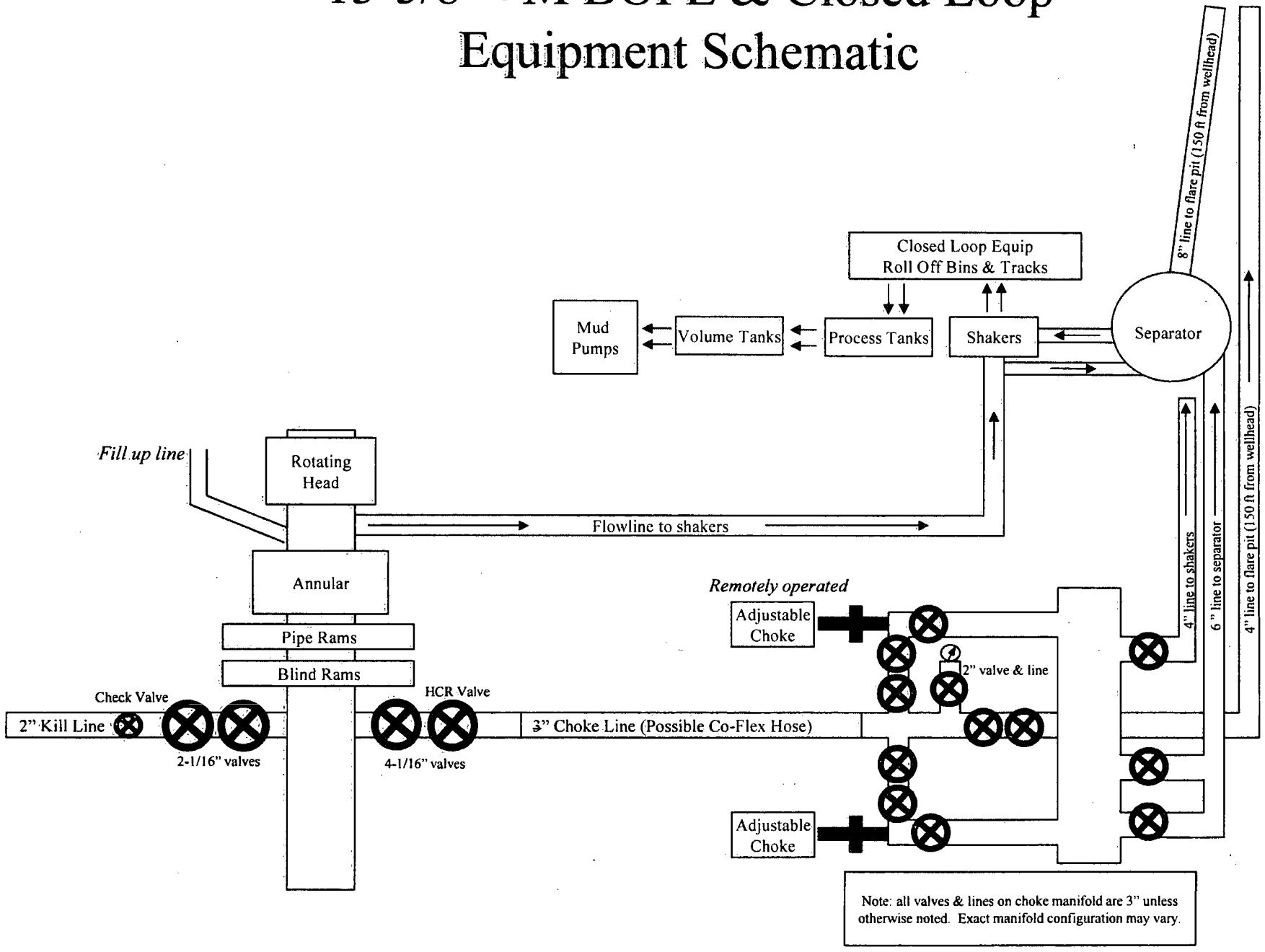
Other Variance attachment:

Gaucho Unit 81H_H_P Co-flex hose_09-19-2016.pdf

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



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



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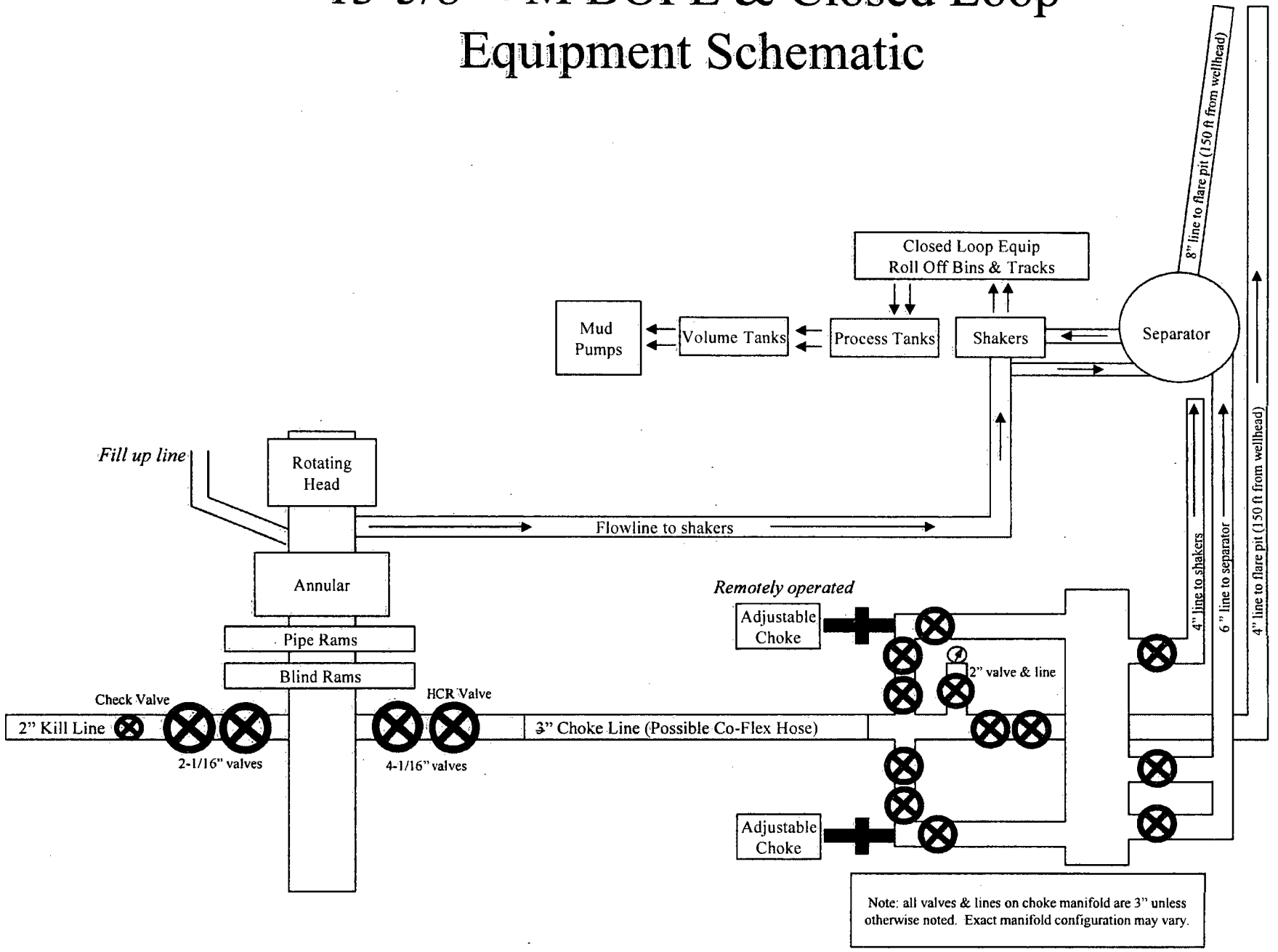
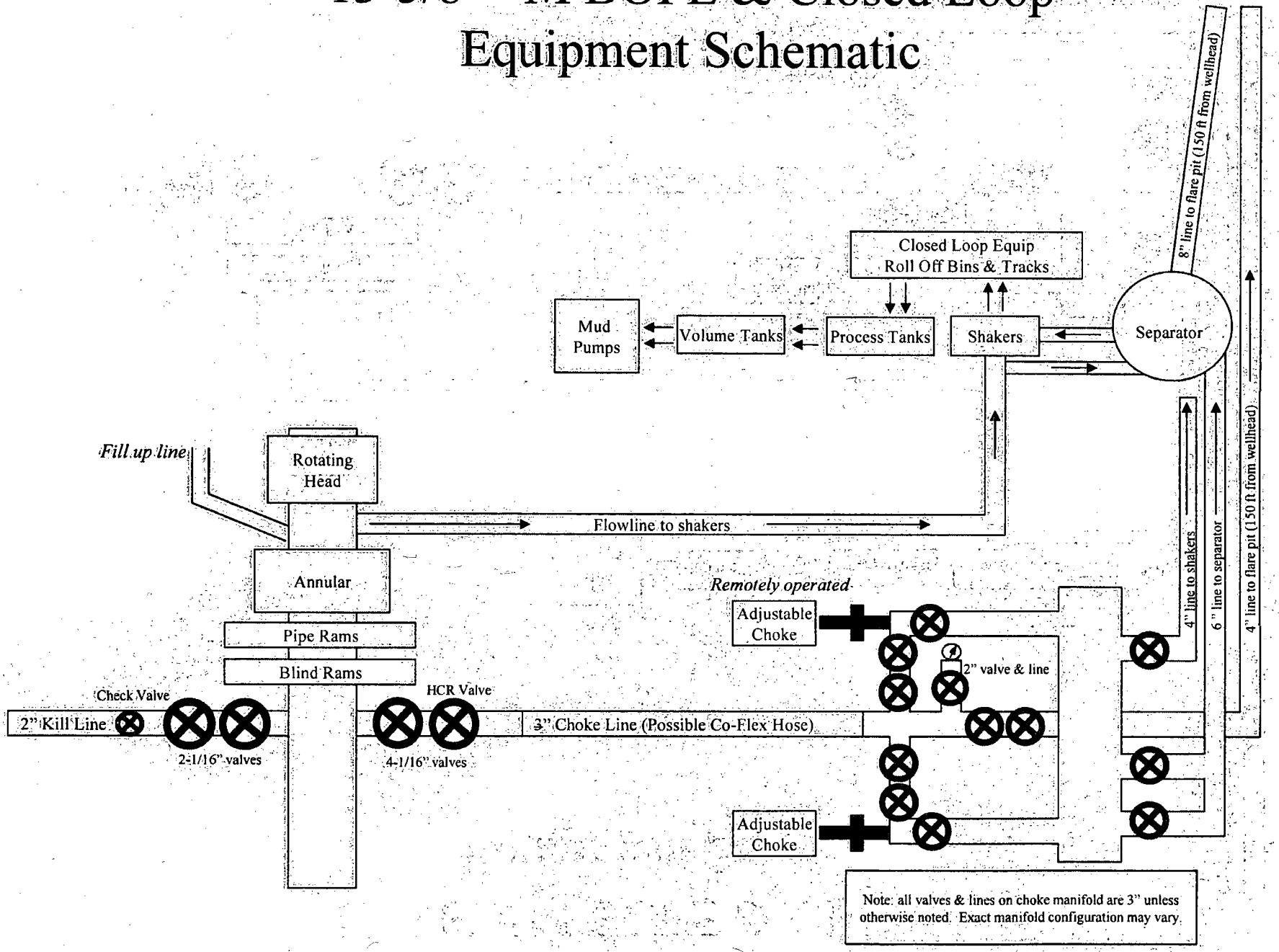


13-5/8" 5M BOPE & Closed Loop Equipment Schematic



Gaucho Unit 81H

Casing Assumptions and Load Cases

Surface

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Surface Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Displace to Gas	Formation Pore Pressure	Dry gas from next casing point

Surface Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Surface Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	3 ft/s
Service Loads	N/A

Gaucho Unit 81H

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Gaucho Unit 81H

Casing Assumptions and Load Cases

Intermediate

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Intermediate Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Max mud weight of next hole-section plus Test psi
Drill Ahead	Formation Pore Pressure	Max mud weight of next hole section
Fracture @ Shoe	Formation Pore Pressure	Dry gas

Intermediate Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC	None
Cementing	Wet cement weight	Water (8.33ppg)

Intermediate Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

Gaucho Unit 81H

Casing Assumptions and Load Cases

Production

All casing design assumptions were ran in Stress Check to determine safety factor which meet or exceed both Devon Energy and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the pipe.

Production Casing Burst Design		
Load Case	**External Pressure**	**Internal Pressure**
Pressure Test	Formation Pore Pressure	Fluid in hole (water or produced water) + test psi
Tubing Leak	Formation Pore Pressure	Packer @ KOP, leak below surface 8.6 ppg packer fluid
Stimulation	Formation Pore Pressure	Max frac pressure with heaviest frac fluid

Production Casing Collapse Design		
Load Case	**External Pressure**	**Internal Pressure**
Full Evacuation	Water gradient in cement, mud above TOC.	None
Cementing	Wet cement weight	Water (8.33ppg)

Production Casing Tension Design	
Load Case	**Assumptions**
Overpull	100kips
Runing in hole	2 ft/s
Service Loads	N/A

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

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