APD ID: 10400032749 **Submission Date:** 08/03/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

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	---	3315	0	0	OTHER : Surface	NONE	No
2	RUSTLER	2424	891	891	SANDSTONE	NONE	No
3	TOP SALT	2064	1251	1251	SALT	NONE	No
4	BELL CANYON	-1646	4961	4961	SANDSTONE	NATURAL GAS,OIL	No
5	BASE OF SALT	-1646	4961	4961	LIMESTONE	NONE	No
6	CHERRY CANYON	-2986	6301	6301	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON	-4616	7931	7931	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRING	-6126	9441	9441	SHALE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-7066	10381	10381	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-7606	10921	10921	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 3RD	-8756	12071	12071	SANDSTONE	NATURAL GAS,OIL	No
12	WOLFCAMP	-9176	12491	12491	SHALE	NATURAL GAS,OIL	Yes
13	STRAWN	-11696	15011	15011	LIMESTONE	NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

Pressure Rating (PSI): 10M **Rating Depth:** 12626

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below intermediate casing, a 13-5/8" BOP/BOPE system with a minimum rating of 10M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for 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. 5M annular on 10M system will be tested to 100% of rated working pressure.

Choke Diagram Attachment:

Jayhawk_7_6_Fed_Fee_Com_7H_10M_BOPE_CHK_20180803102330.pdf

BOP Diagram Attachment:

Jayhawk_7_6_Fed_Fee_Com_7H_10M_BOPE_CHK_20180803102341.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 12626

Equipment: BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 10-3/4” surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system. BOP/BOPE will be tested by an independent service company per Onshore Oil & Gas Order #2 requirements and MASP (Maximum Anticipated Surface Pressure) calculations. If the system is upgraded, all the components installed will be functional and tested.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP stack to the choke manifold. See attached for specs for 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.

Choke Diagram Attachment:

Jayhawk_7_6_Fed_Fee_Com_7H_5M_BOPE__CK_20180803102406.pdf

BOP Diagram Attachment:

Jayhawk_7_6_Fed_Fee_Com_7H_5M_BOPE__CK_20180803102417.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

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	14.75	10.75	NEW	API	N	0	900	0	900			900	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	12080	0	12053			12080	P-110	29.7	OTHER - BTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	INTERMEDIATE	8.75	7.625	NEW	API	N	12080	12980	12053	12626			900	P-110	29.7	OTHER - FLUSHMAX	1.125	1.25	BUOY	1.6	BUOY	1.6
4	PRODUCTION	6.75	5.5	NEW	API	N	0	22670	0	12626			22670	P-110	20	OTHER - VAM SG	1.125	1.25	BUOY	1.6	BUOY	1.6

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jayhawk_7_6_Fed_Fee_Com_7H_Surf_Csg_Ass_20180803102459.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jayhawk_7_6_Fed_Fee_Com_7H_Int_Csg_Ass_20180803102539.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jayhawk_7_6_Fed_Fee_Com_7H_Int_Csg_Ass_20180803102629.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Jayhawk_7_6_Fed_Fee_Com_7H_Prod_Csg_Ass_20180803102653.pdf

Section 4 - Cement

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	0	0	0	0	0		SEE DRLG PLAN	N/A
SURFACE	Lead		0	900	560	1.34	14.8	750	50	CLASS C	1% Calcium Chloride
INTERMEDIATE	Lead		0	8980	358	3.27	9	1172	30	TUNED	Tuned Light
INTERMEDIATE	Tail		8980	12980	614	1.6	13.2	982	30	CLASS H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		12780	22670	775.67	1.33	13.2	1032	25	Class H	0.125 lbs/sack Poly-E-Flake

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

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

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	900	SPUD MUD	8.33	9				2			
900	12980	SALT SATURATED	9	10				2			
900	12980	SALT SATURATED	9	10				2			
12980	22670	OIL-BASED MUD	10	12				12			

Section 6 - Test, Logging, Coring

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

Will run GRMWD from TD to from KOP. Cement bond logs will be run in vertical to determine top of cement. 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:

CALIPER,CBL,DS,GR,MUDLOG

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7879 **Anticipated Surface Pressure:** 5101.28

Anticipated Bottom Hole Temperature(F): 180

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:

Jayhawk_7_6_Fed_Fee_Com_7H_H2S_Plan_20180803102905.pdf

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: JAYHAWK 7-6 FED FEE COM **Well Number:** 7H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Jayhawk_7_6_FED_FEE_COM_7H_DIR_SVY_20180803102918.pdf

Other proposed operations facets description:

MULTI-BOWL VERBIAGE
MULTI-BOWL WELLHEAD - 2 VARIATIONS OF 10M
10M ANNULAR VARIANCE DOC & SCHEMATIC
CLOSED LOOP DESIGN PLAN
DRILLING PLAN
AC REPORT
CO-FLEX HOSE
SPUDDER RIG REQUEST
GCP FORM
SPEC SHEETS - 5

Other proposed operations facets attachment:

5.5_x_20_P110_EC_VAMSG_20180803103609.pdf
5.5_x_20_P110_EC_VAMTOP_HT_20180803103611.pdf
7.625_29.70_P110_Flushmax_20180803103611.pdf
8.625_32__P110EC___7.875_SD_20180803103612.pdf
Jayhawk_7_6_Fed_Fee_Com_7H__Spudder_Rig_Info_20180803103614.pdf
8.625_32__P110EC_VAM_FJL_NA_7.875_SD_20180803103613.PDF
Jayhawk_7_6_FED_FEE_COM_7H_AC_Report_20180803103615.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_Annular_Preventer_Summary_20180803103616.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_Clsd_Loop_20180803103618.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_MB_Wellhd_5M___Use_for_Wolfcamp_5M_Only_20180803103622.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_MB_Wellhd_10M_2_20180803103624.PDF
Jayhawk_7_6_Fed_Fee_Com_7H_MB_Wellhd_10M_20180803103626.pdf
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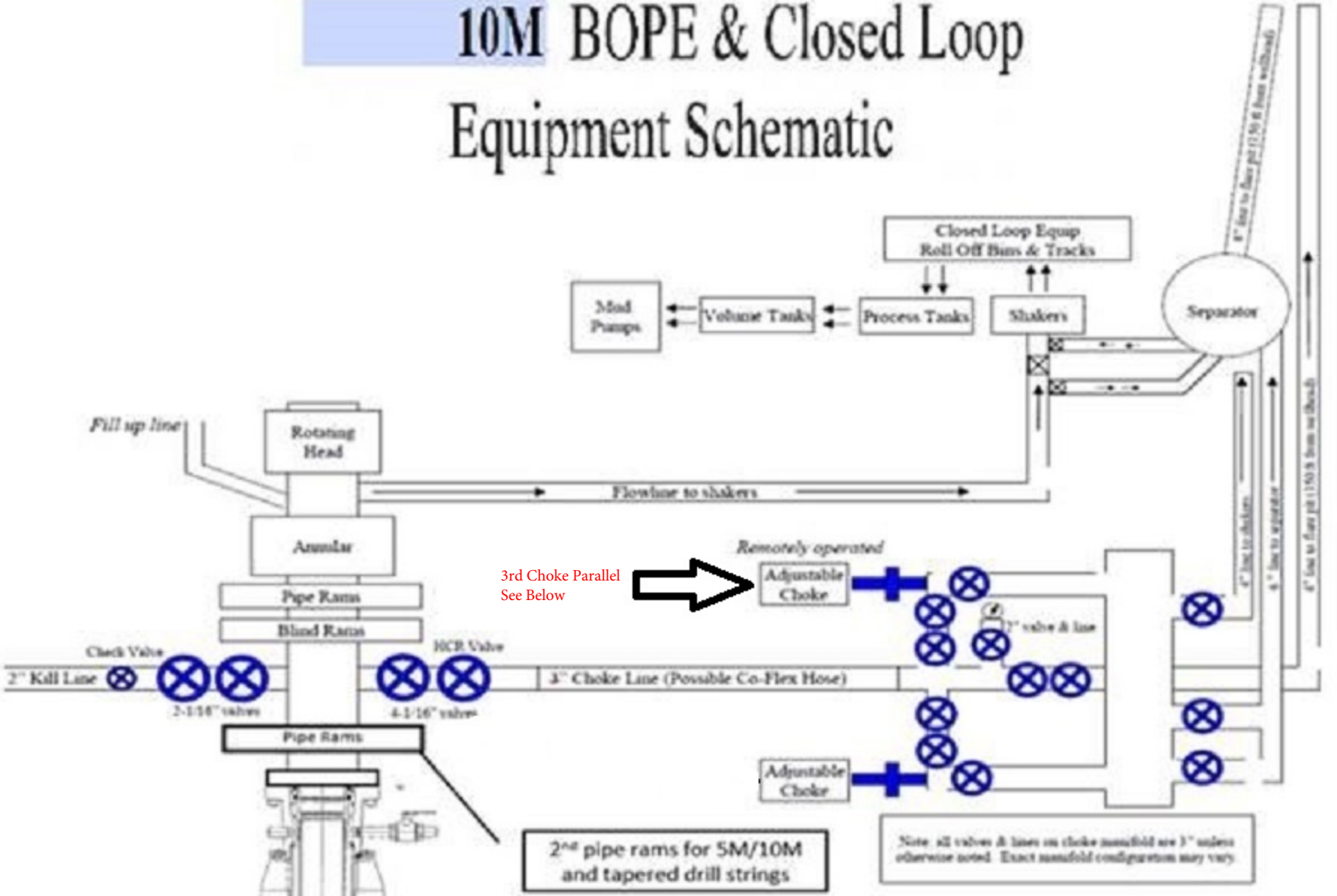
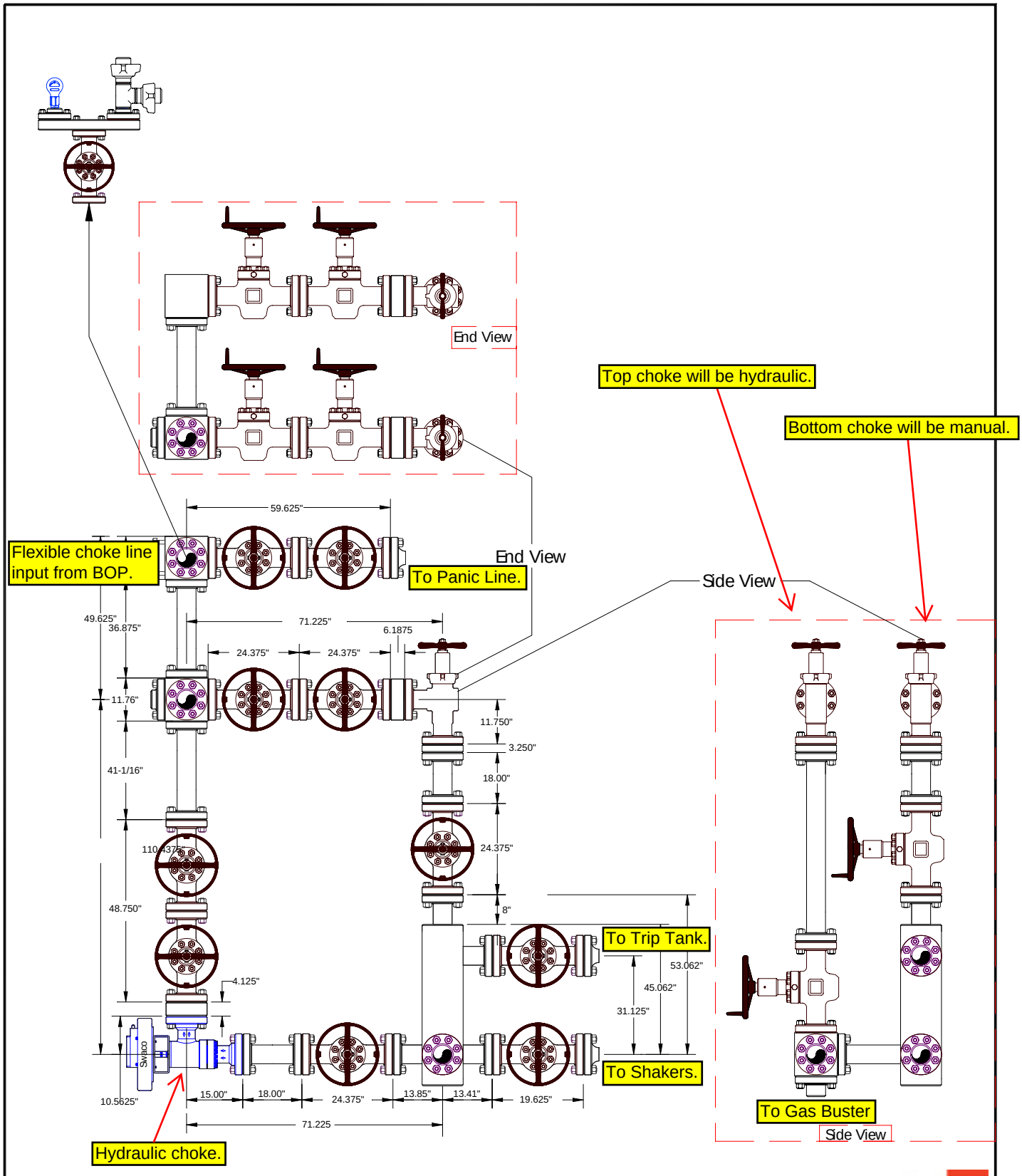
Jayhawk_7_6_Fed_Fee_Com_7H_10M_BOPE_DR_and_CLS_Exc_Schem_Ann_Exc_20180803103650.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_GCP_Form_20180803103652.pdf
10M_BOPE_DR_CLS_RKL_20181205123911.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_Drilling_Doc_R2_20181219083252.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_MB_Verb_5M_20181219083403.pdf
Jayhawk_7_6_Fed_Fee_Com_7H_MB_Verb_10M_R_20181219083403.pdf

Other Variance attachment:

Jayhawk_7_6_Fed_Fee_Com_7H_Co_flex_20180803103704.pdf

10M BOPE & Closed Loop Equipment Schematic



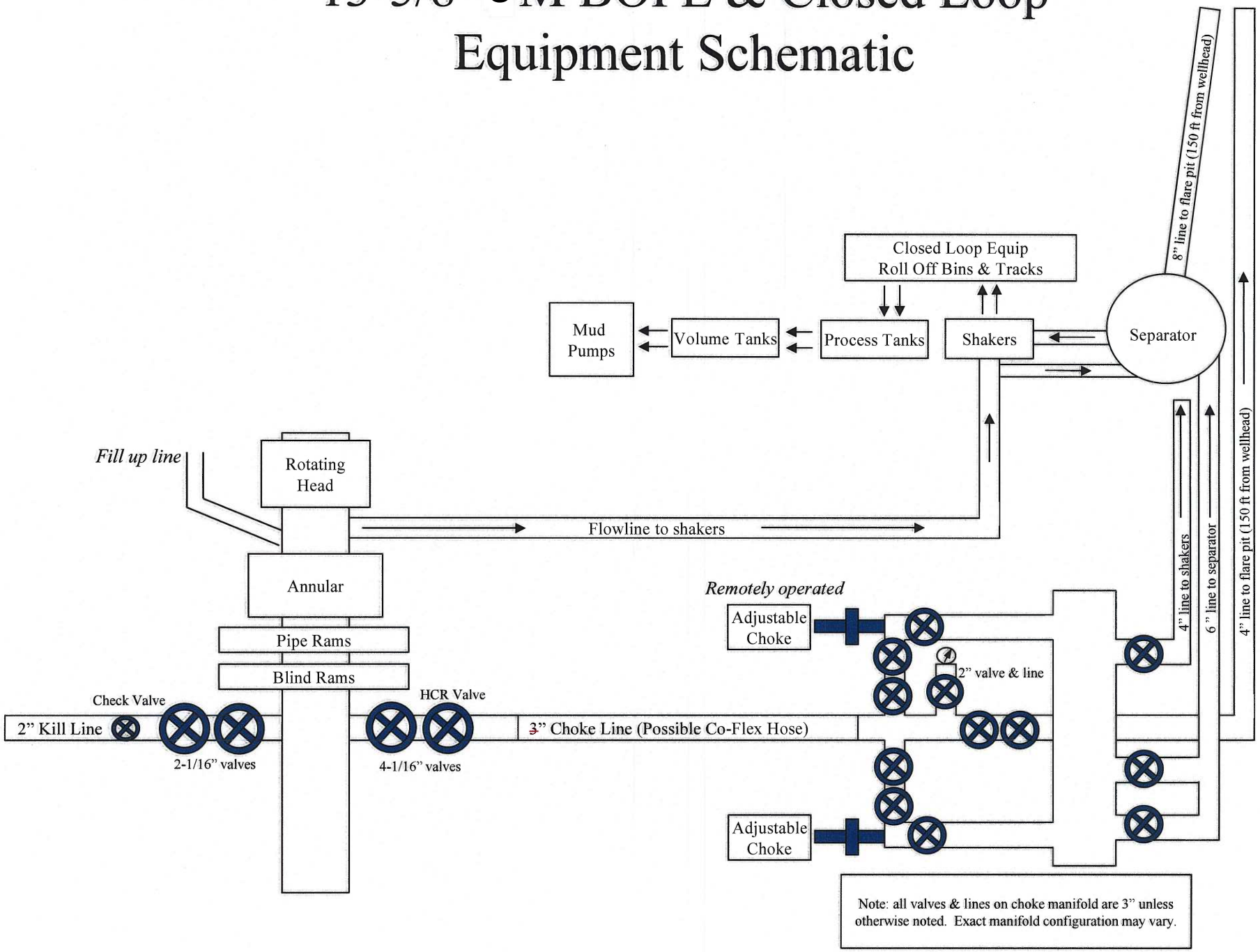


Helmerich & Payne

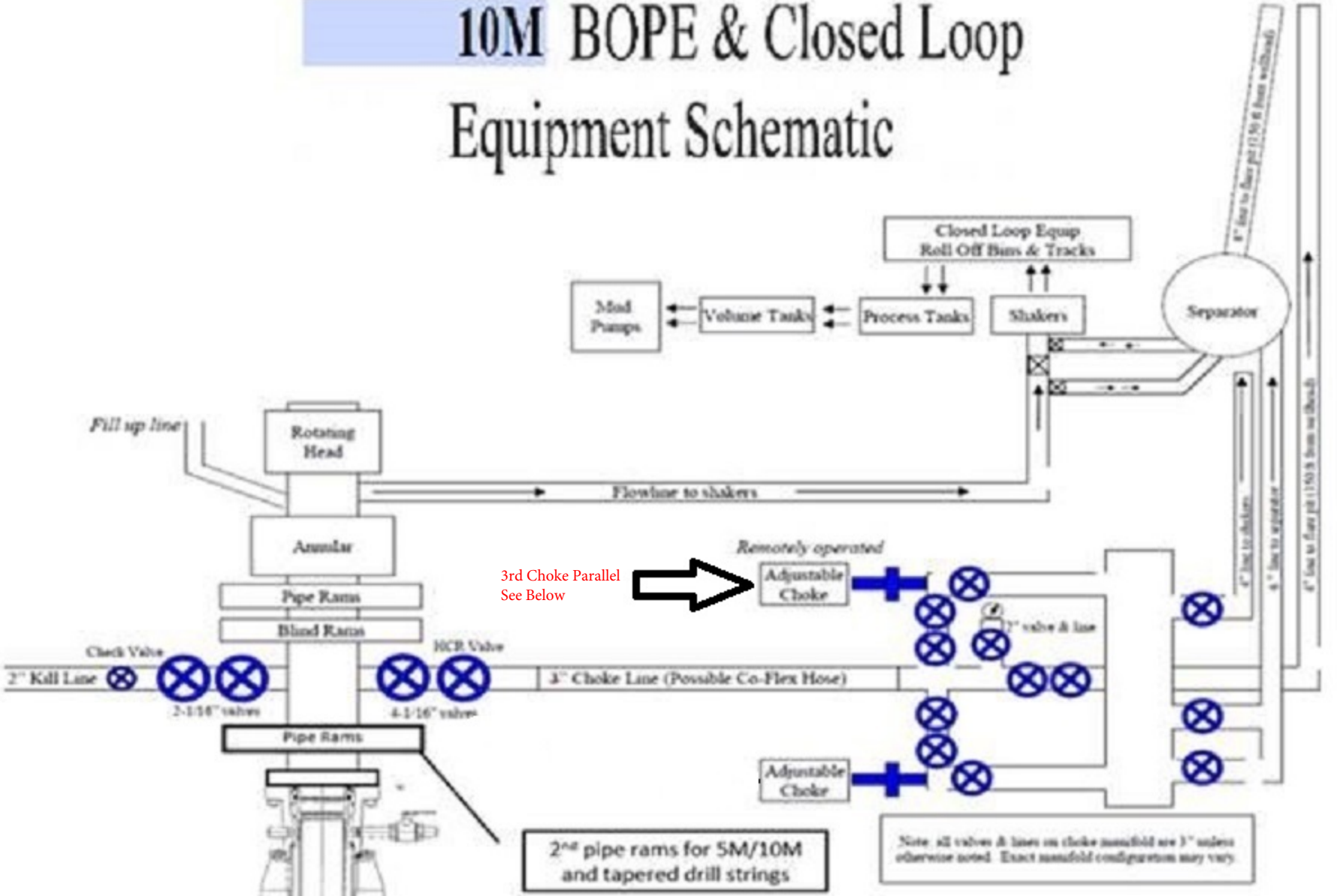
Flex 3 Rig w/ 3 Chokes

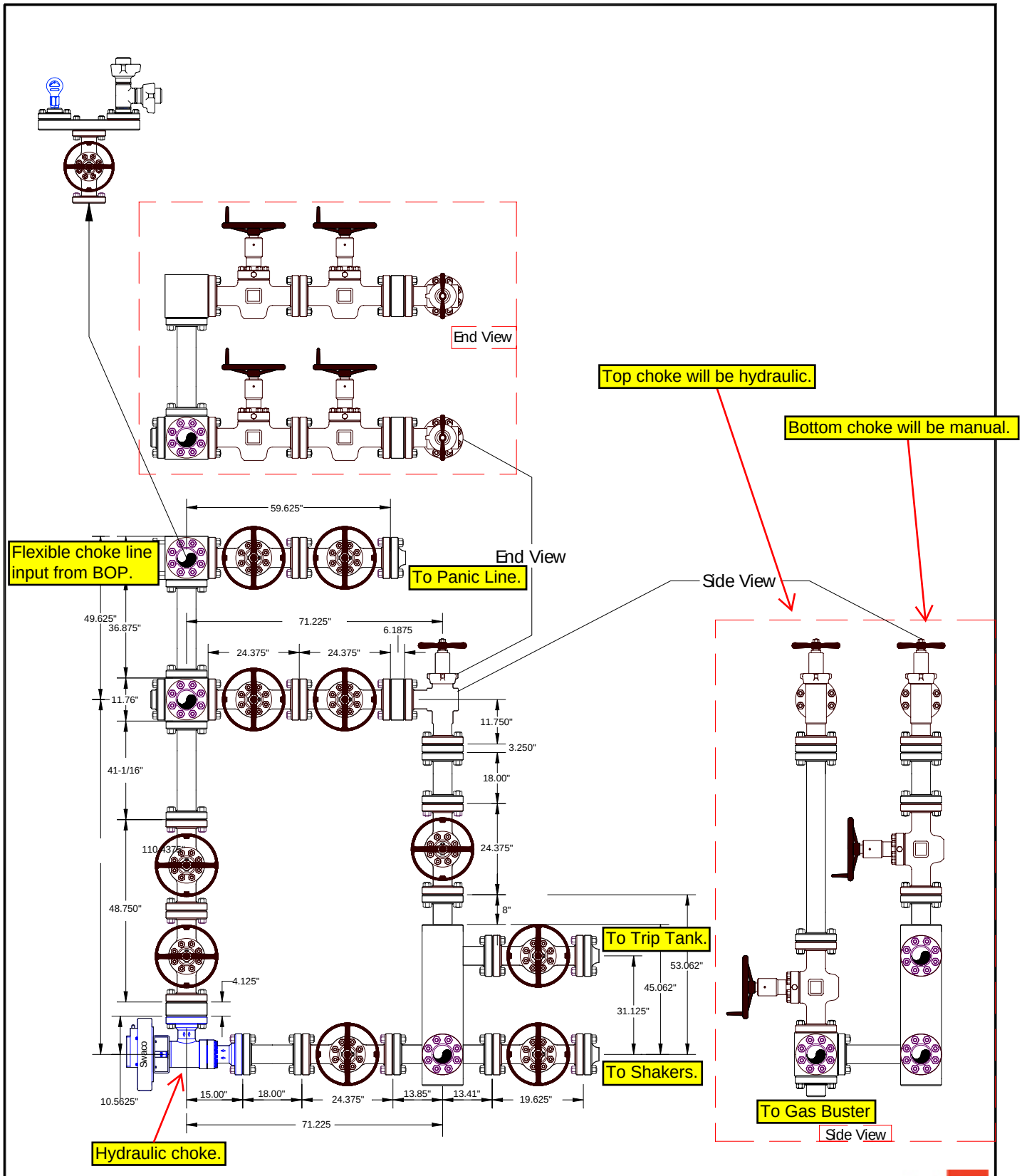
Name:	Date:	Working Pressure:	
Mike Potts	6-23-2010	10M	J-5132-E

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



10M BOPE & Closed Loop Equipment Schematic





Helmerich & Payne

Flex 3 Rig w/ 3 Chokes

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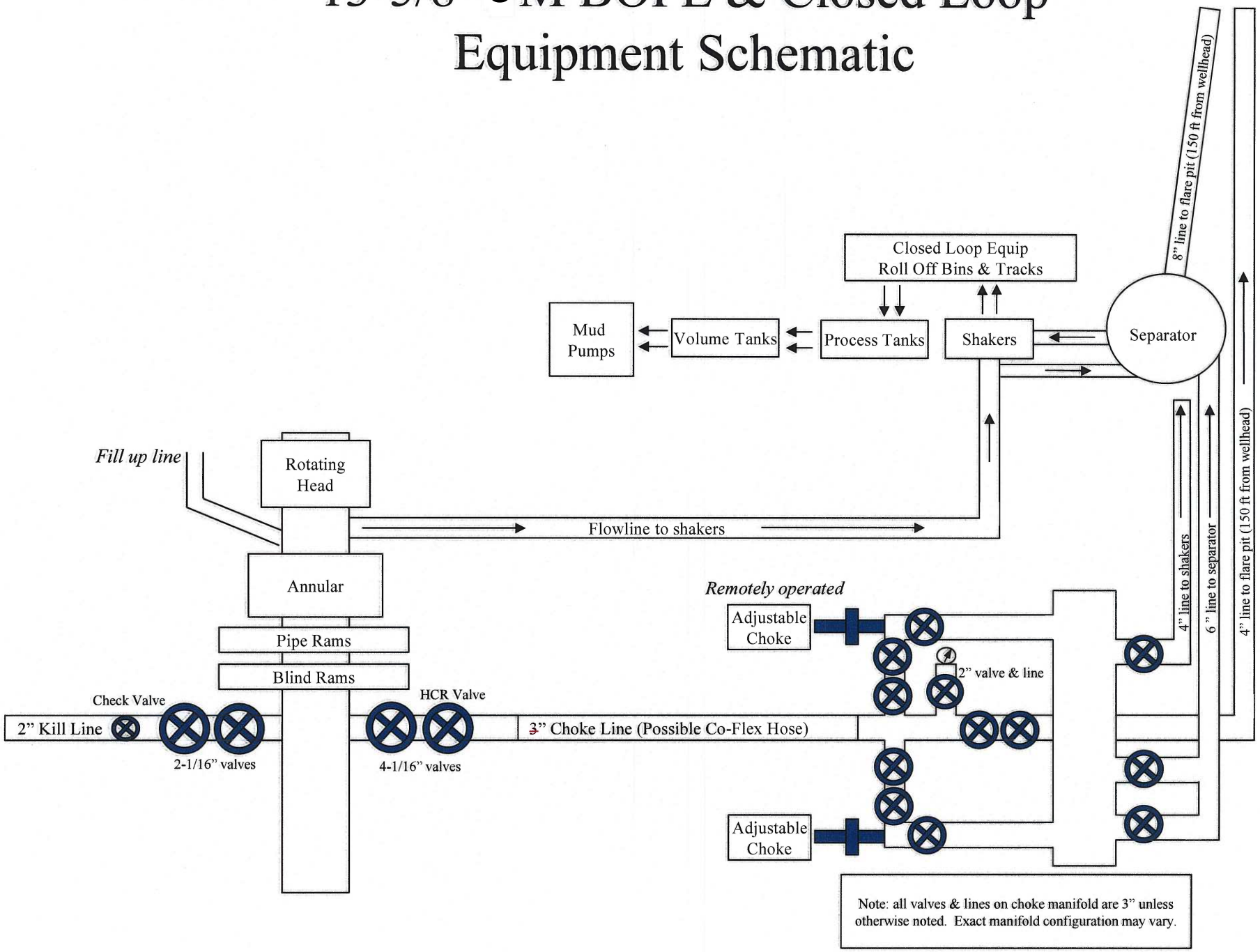

Casing Assumptions and Load Cases

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

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

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

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