

APD ID: 10400014341

Submission Date: 05/26/2017

Highlighted data reflects the most recent changes

Operator Name: CHEVRON USA INCORPORATED

Well Name: SD EA 18 19 FED COM P15

Well Number: 18H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17746	RUSTLER	3231	0	0	ANHYDRITE	NONE	No
17762	CASTILE	-249	3480	3480	DOLOMITE	NONE	No
17719	LAMAR	-1669	4900	4900	LIMESTONE	NONE	No
15332	BELL CANYON	-1699	4930	4930	SANDSTONE	NONE	No
15316	CHERRY CANYON	-2739	5970	5970	SANDSTONE	NONE	No
17713	BRUSHY CANYON	-4389	7620	7620	SANDSTONE	NONE	No
17721	BONE SPRING LIME	-5859	9090	9090	LIMESTONE	NONE	No
19973	UPPER AVALON SHALE	-5889	9120	9120	SHALE	NONE	No
15338	BONE SPRING 1ST	-6809	10040	10040	LIMESTONE	NONE	No
17737	BONE SPRING 2ND	-7469	10700	10700	LIMESTONE	NONE	No
17738	BONE SPRING 3RD	-8509	11740	11740	LIMESTONE	NONE	No
17709	WOLFCAMP	-8909	12140	12140	SHALE	NONE	No
17709	WOLFCAMP	-8962	12193	23000	SHALE	OIL	Yes

Section 2 - Blowout Prevention

Operator Name: CHEVRON USA INCORPORATED

Well Name: SD EA 18 19 FED COM P15

Well Number: 18H

Pressure Rating (PSI): 10M

Rating Depth: 12213

Equipment: MINIMUM OF 10000 PSI RIG STACK (SEE SCHEMATIC FOR DRILL OUT BELOW SURFACE CASING) Wolfcamp is not exposed until drillout of the inter csg. Could possibly use 5000psi rig stack for drill out below surf csg due to availability of 10M annular.

Requesting Variance? YES

Variance request: FMC UH2 MULTIBOWL WELLHEAD WHICH WILL BE RUN THROUGH THE RIG FLOOR ON SURFACE CASING. BOPE WILL BE NIPPLED UP & TESTED AFTER CEMENTING SURF CSG. SUBSEQUENT TESTS WILL BE PERFORMED AS NEEDED, NOT TO EXCEED 30 DAYS. ALSO, VARIANCE TO USE FLEX CHOKE HOSE ON ALL WELLS

Testing Procedure: STACK WILL BE TESTED AS SPECIFIED IN THE ATTACHED TESTING REQUIREMENTS. BATCH DRILLING OF THE SURF, INTER, & PROD WILL TAKE PLACE. A FULL BOP TEST WILL BE PERFORMED UNLESS APPROVAL FROM BLM IS RECEIVED OTHERWISE. FLEX CHOKE HOSE WILL BE USED FOR ALL WELLS ON THE PAD. THE FIELD REPORT FROM FMC & BOP TEST INFO WILL BE PROVIDED IN A SUBSEQUENT REPORT AT THE END OF THE WELL. AN INSTALLATION MANUAL HAS BEEN PLACED ON FILE WITH THE BLM OFFICE AND REMAINS UNCHANGED FROM PREVIOUS SUBMITTAL.

Choke Diagram Attachment:

Choke_hose_Spec_X30_20170828143944.pdf

1684_001_20170828144000.pdf

BOP Diagram Attachment:

UH_2_10K_20170828144034.pdf

10M_BOP_Choke_Schematics_BLM_new_20170915080946.pdf

Section 3 - Casing

Table with 22 columns: 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. It contains 3 rows of casing data.

Casing Attachments

Operator Name: CHEVRON USA INCORPORATED

Well Name: SD EA 18 19 FED COM P15

Well Number: 18H

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	800	650	1.33	14.8	154	50	CLASS C	NONE
INTERMEDIATE	Lead		4870	10650	1024	2.21	11.9	403	25	50:50 POZ CLASS C	NONE
INTERMEDIATE	Tail		10650	11150	184	1.22	15.6	40	25	CLASS H	NONE
PRODUCTION	Lead		10350	23000	1362	1.2	15.6	291	17	ACID SOLUBLE	NONE

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: IN COMPLIANCE WITH ONSHORE ORDER #2

Describe the mud monitoring system utilized: VISUAL MUD MONITORING EQPT, PVT, STROKE COUNTER, FLOW SENSOR IN COMPLIANCE WITH ONSHORE ORDER #2

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	800	SPUD MUD	8.3	8.7							
11150	12300	OIL-BASED MUD	9.5	13.5							
800	11150	OIL-BASED MUD	8.7	9.2							
12300	22300	OIL-BASED MUD	9.5	13.5							

Operator Name: CHEVRON USA INCORPORATED

Well Name: SD EA 18 19 FED COM P15

Well Number: 18H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

SD_EA_1819_P15_18H_9_PT_PLAN_20170828144310.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

SD_EA_1819_P15_18H_9_PT_PLAN_20170828144343.pdf

9.625_43.5lb_L80IC_LTC_20170915081352.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

SD_EA_1819_P15_18H_9_PT_PLAN_20170828144416.pdf

TenarisXP_BTC_5.500_20_P110_ICY_20170915081557.PDF

Operator Name: CHEVRON USA INCORPORATED

Well Name: SD EA 18 19 FED COM P15

Well Number: 18H

Section 6 - Test, Logging, Coring

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

DRILL STEM TESTS NOT PLANNED

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

MWD

Coring operation description for the well:

CONVENTIONAL WHOLE CORE SAMPLES ARE NOT PLANNED. DIRECTIONAL SURVEY TO BE RUN

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8573

Anticipated Surface Pressure: 5886.14

Anticipated Bottom Hole Temperature(F): 160

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

SD_EA_18_19_P15_H2S_PLAN_05-26-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

SD_EA_18_19_P15_18H_PLOT_05-26-2017.pdf

SD_EA_18_19_P15_18H_WELLPATH_05-26-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Gas_Capture_Plan_Form_Pad_15_20170828144804.pdf

Other Variance attachment:



ContiTech

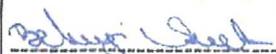
Hose Data Sheet

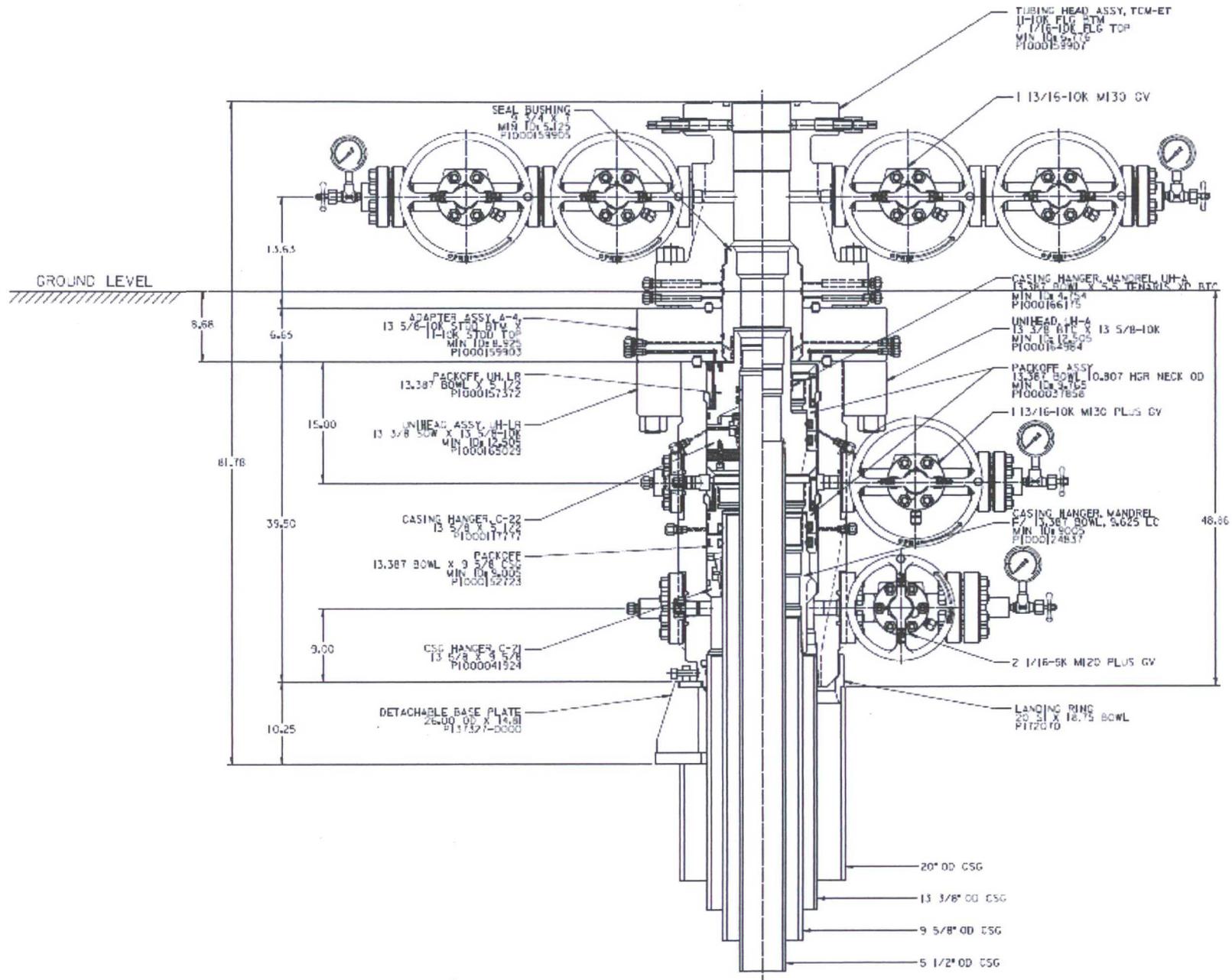
CRI Order No.	538332
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500412631 CBC544771, CBC544769, CBC544767, CBC544763, CBC544768, CBC544745, CBC544744, CBC544746
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	45 ft
Type of coupling one end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE SOURC/W BX155 ST/ST INLAID R.GR.
Type of coupling other end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE SOUR C/W BX155 ST/ST INLAID R.GR.
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	Yes
Lifting collar	Yes
Element C	Yes
Safety chain	Yes
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15



ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 231/ 2014
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 594	
PURCHASER: Contitech Oil & Marine Corp.			P.O. N°: 4500412631		
CONTITECH ORDER N°: 538332	HOSE TYPE: 3" ID		Choke & Kill Hose		
HOSE SERIAL N°: 67349	NOMINAL / ACTUAL LENGTH:		13,72 m / 13,85 m		
W.P. 68,9 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	
3" coupling with 4 1/16" 10K API Swivel Flange end Hub		1435 1436		AISI 4130 AISI 4130 AISI 4130	
				Heat N° A1258U 034939 A1045N	
Not Designed For Well Testing				API Spec 16 C	
Tag No.: 66 – 1198				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER 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.					
Date: 03. April 2014.	Inspector		Quality Control Contitech Rubber Industrial Kft. Quality Control Dept. (1)		
			 		



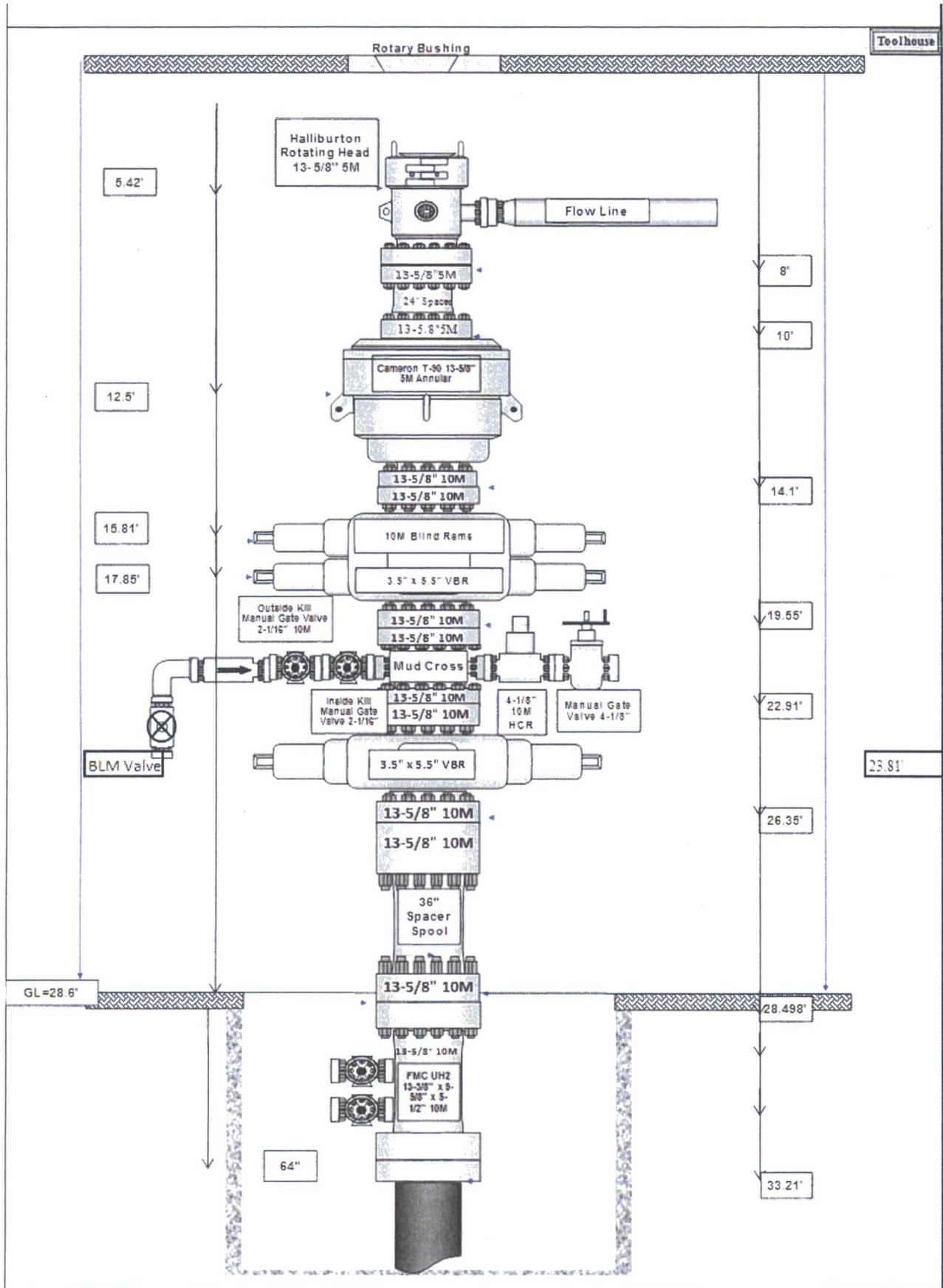


Diagram A

CHOKE MANIFOLD SCHEMATIC

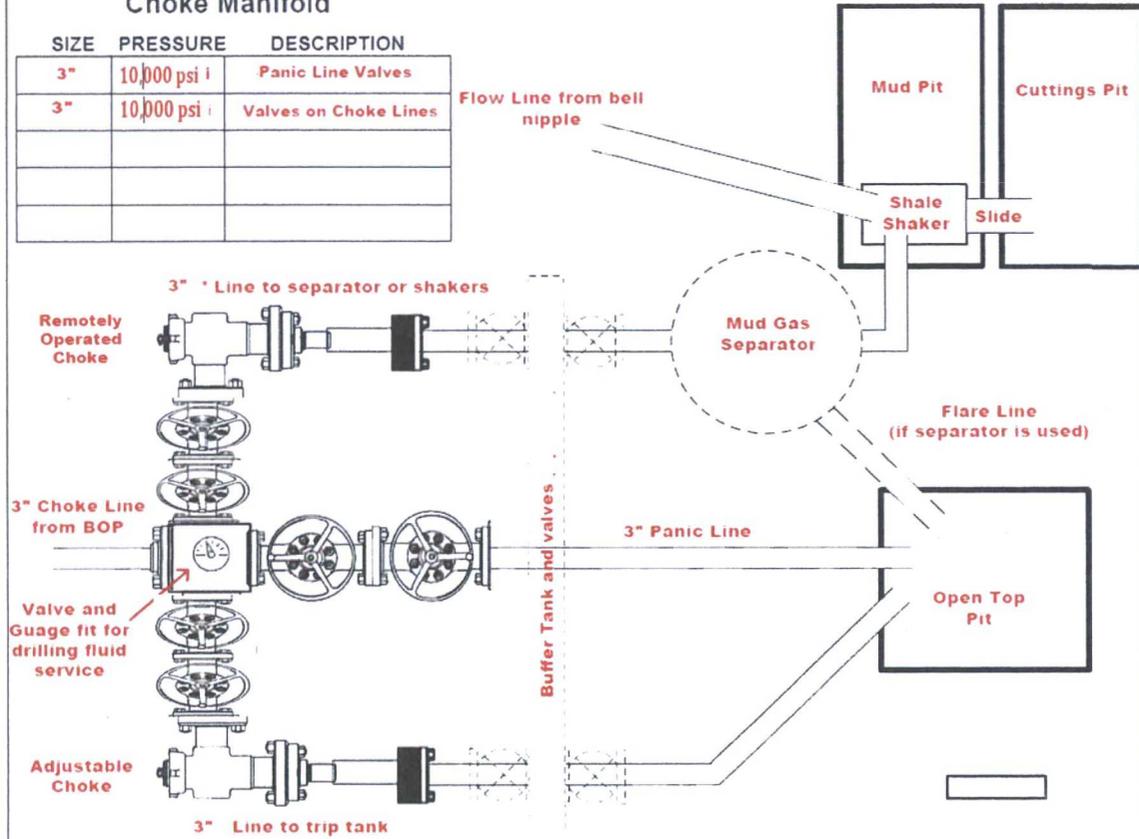
Minimum Requirements

OPERATION : Wolfcamp A wells

Minimum System Pressure Rating : 10,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	10,000 psi	Panic Line Valves
3"	10,000 psi	Valves on Choke Lines



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.
- Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.
- Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.
- The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tress, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.
- All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.
- All manual valves will have hand wheels installed.
- If used, flare system will have effective method for ignition
- All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)
- If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

10M BLOWOUT PREVENTER SCHEMATIC

Minimum Requirements

OPERATION: Wolfcamp Wells in Salado Draw

Minimum System Pressure Rating: **10,000 PSI**

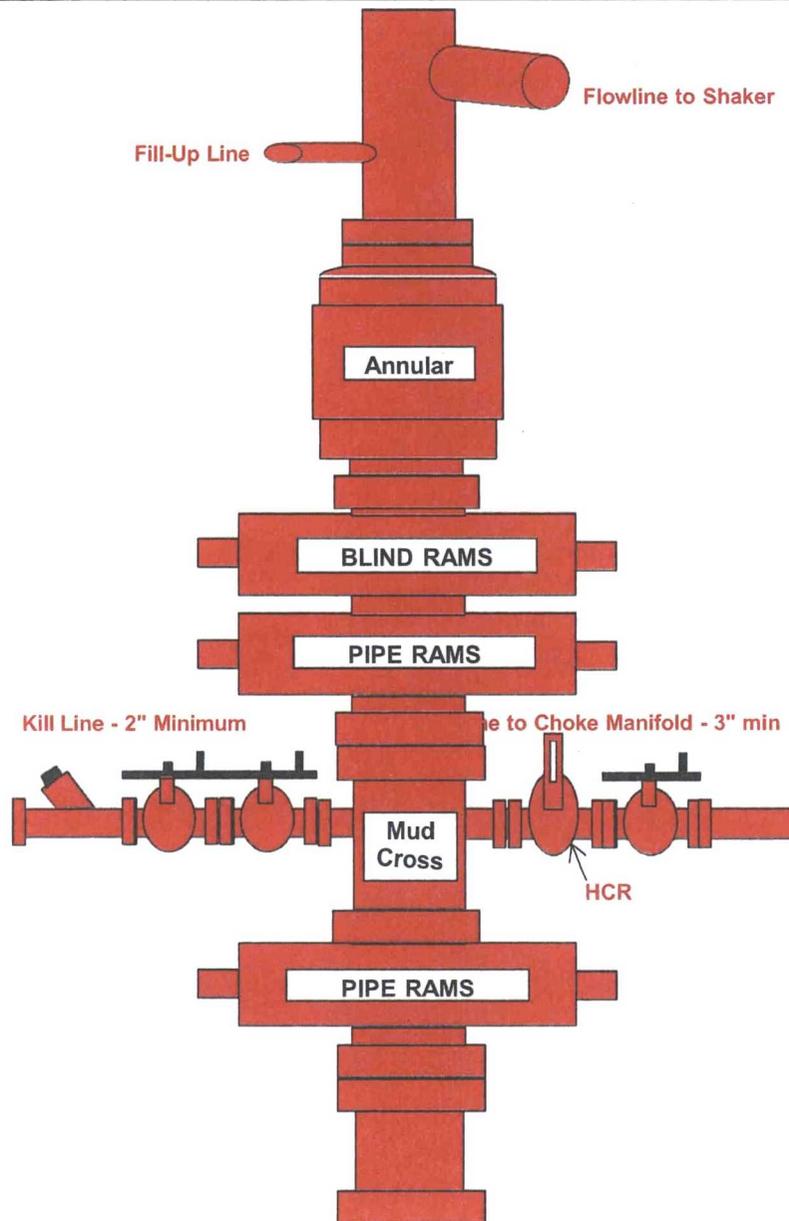


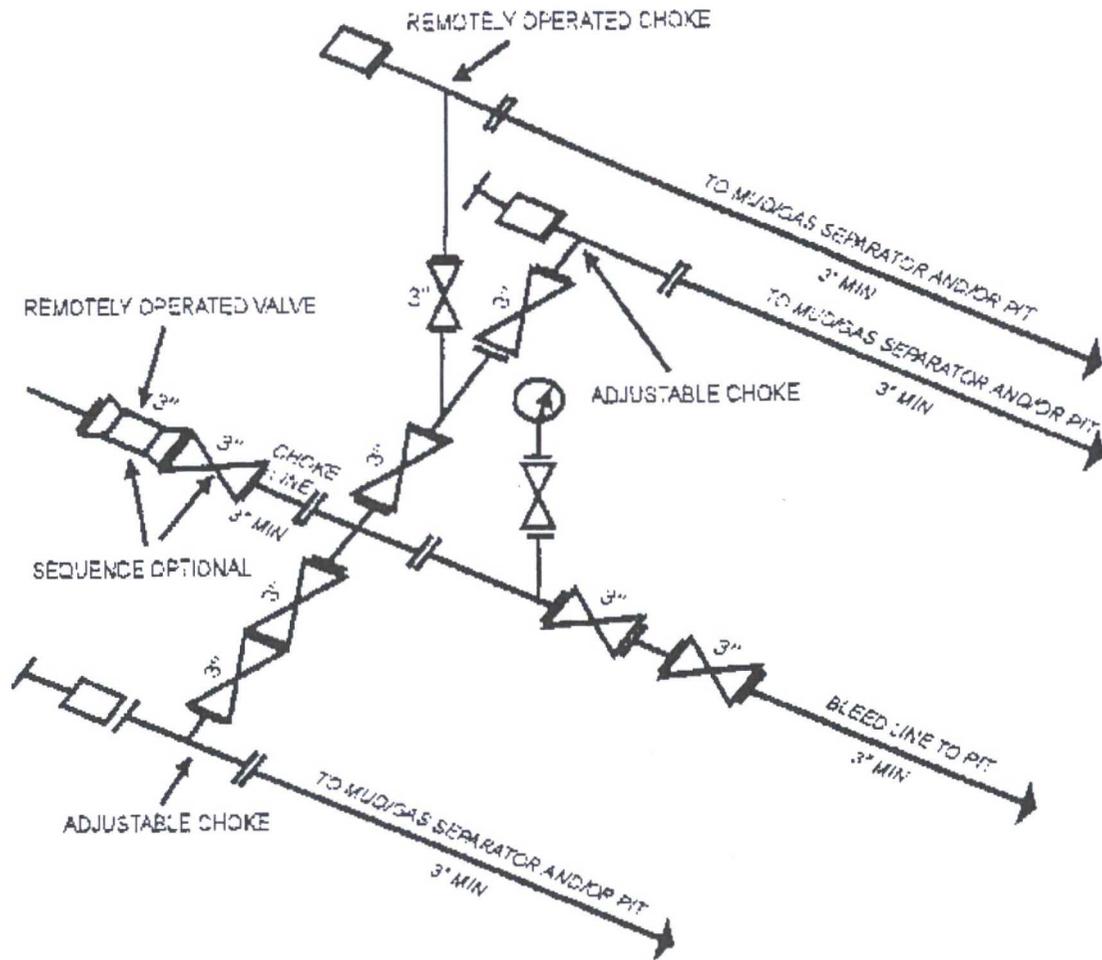
Diagram C

10M Choke Manifold SCHEMATIC

Minimum Requirements

OPERATION: Production and Open Hole Sections

Minimum System Pressure Rating: 10,000 PSI



10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY
[53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989]

Diagram D

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Rustler		800	
Castile		3480	
Lamar		4900	
Bell Canyon		4930	
Cherry Canyon		5970	
Brushy Canyon		7620	
Bone Spring Limestone		9090	
Upr. Avalon		9120	
Top Bone Spring 1		10040	
Top Bone Spring 2		10700	
Top Bone Spring 3		11740	
Wolfcamp		12140	
Wolfcamp A1		12193	
Lateral TD (Wolfcamp A1)		12,213	22300

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		700
Water	Rustler	800
Water	Bell Canyon	4930
Water	Cherry Canyon	5970
Oil/Gas	Brushy Canyon	7620
Oil/Gas	Bone Spring Limestone	9090
Oil/Gas	Upr. Avalon	9120
Oil/Gas	Top Bone Spring 1	10040
Oil/Gas	Top Bone Spring 2	10700
Oil/Gas	Top Bone Spring 3	11740
Oil/Gas	Wolfcamp	12140
Oil/Gas	Wolfcamp A1	12193
Oil/Gas		

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

Will have a minimum of a 10000 psi rig stack (see proposed schematic) for drill out below surface (Wolfcamp is not exposed until drillout of the intermediate casing). Could possibly utilize the 5000 psi rig stack (see proposed schematic) for drill out below surface casing due to the availability of 10 M annular. (Wolfcamp is not exposed until drillout of the intermediate casing) Stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs) BOP test will be conducted by a third party.

Chevron requests a variance to use a FMC UH2 Multibowl wellhead, which will be run through the rig floor on surface casing. BOPE will be nipped up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	800'	17-1/2"	13-3/8"	55 #	J55	STC	New
Intermediate	0'	11,500'	12-1/4"	9-5/8"	43.5#	HCK-L80	LTC	New
Production	0'	22,300'	8-1/2"	5-1/2"	20.0 #	P-110-ICY	TXP BTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. *****A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.**

d. Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 850'
 Intermediate Casing: 11,200' TVD
 Production Casing: 23,000' MD/12,750' TVD (10,300' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.36	3.12	3.17	1.70
Intermediate	1.12	1.44	1.93	1.37
Production	1.11	1.23	1.97	1.37

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 16 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	800'	14.8	1.33	50	650	6.57
Intermediate								
Stage 2 Lead	Class C	0'	4570'	11.9	2.39	100	1070	13.46
Stage 2 Tail	Class C	4570'	4870'	14.8	1.33	25	89	6.35
Stage 1 Lead	50:50 Poz Class C	4,870'	10,650'	11.9	2.21	25	1024	12.18
Stage 1 Tail	Class H	10,650'	11,150'	15.6	1.22	25	184	5.37
Production								
Tail	Acid Soluble	10,350'	22,300'	15.6	1.2	10	2500	5.05

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing.

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	800'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
800'	11,150'	Oil Based Mud	8.7-9.2	28 - 30	25-30
11,150'	12,300'	Oil Based Mud	9.5-13.5	70 - 75	25 - 30
12,300'	22,300'	Oil Based Mud	9.5-13.5	70 - 75	25 - 30

A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

- a. Drill stem tests are not planned.
- b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

- c. Conventional whole core samples are not planned.
- d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- a. No abnormal pressures or temperatures are expected. Estimated BHP at intermediate TD is: 5750 psi
 No abnormal pressures or temperatures are expected. Estimated BHP at production TD is: 8650 psi
- b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Casing and Tubing Performance Data

PIPE BODY DATA

GEOMETRY

Outside Diameter	9.625 in	Wall Thickness	0.435 in	API Drift Diameter	8.599 in
Nominal Weight	43.50 lbs/ft	Nominal ID	8.755 in	Alternative Drift Diameter	8.625 in
Plain End Weight	42.73 lbs/ft	Nominal cross section	12.559 in		

PERFORMANCE

Steel Grade	L80	Minimum Yield	80,000 psi	Minimum Ultimate	95,000 psi
Tension Yield	1,005,000 in	Internal Pressure Yield	6,330 psi	Collapse Pressure	3,810 psi
Available Seamless	Yes	Available Welded	No		

CONNECTION DATA

TYPE: LTC

GEOMETRY

Coupling Reg OD	10.625 in	Threads per in	8	Thread turns make up	3.5
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PERFORMANCE

Steel Grade	L80	Coupling Min Yield	80,000 psi	Coupling Min Ultimate	95,000 psi
Joint Strength	813,000 lbs			Internal Pressure Resistance	6,330 psi

For the latest performance data, always visit our website: www.tenaris.com

January 18 2016



Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110-ICY
Min. Wall Thickness: 87.5 %



PIPE BODY DATA

GEOMETRY			
Nominal OD	5.500 in.	Nominal Weight	20.00 lbs/ft
Nominal ID	4.778 in.	Wall Thickness	0.361 in.
Plain End Weight	19.83 lbs/ft	Standard Drift Diameter	4.653 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	729 x 1000 lbs	Internal Yield	14360 psi
Collapse	12100 psi	SMYS	125000 psi

TENARISXP® BTC CONNECTION DATA

GEOMETRY			
Connection OD	6.100 in.	Coupling Length	9.450 in.
Critical Section Area	5.828 sq. in.	Threads per in.	5.00
		Connection ID	4.766 in.
		Make-Up Loss	4.204 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	729 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	729 x 1000 lbs
External Pressure Capacity	12100 psi	Internal Pressure Capacity ⁽¹⁾	14360 psi
		Structural Bending ⁽²⁾	104 °/100 ft

ESTIMATED MAKE-UP TORQUES⁽³⁾

Minimum	11540 ft-lbs	Optimum	12820 ft-lbs	Maximum	14100 ft-lbs
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OPERATIONAL LIMIT TORQUES

Operating Torque	22700 ft-lbs	Yield Torque	25250 ft-lbs
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BLANKING DIMENSIONS

[Blanking Dimensions](#)

- **(1)** Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2)** Structural rating, pure bending to yield (i.e no other loads applied)
- (3)** Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed. For additional information, please contact us at contact-tenarishydriil@tenaris.com