

F/R  
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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
APPLICATION FOR PERMIT TO DRILL OR REENTER

**HOBBS OCD**  
**RECEIVED**  
APR 26 2019

1a. Type of work:  DRILL  REENTER  
1b. Type of Well:  Oil Well  Gas Well  Other  
1c. Type of Completion:  Hydraulic Fracturing  Single Zone  Multiple Zone

5. Lease Serial No.  
NMNM113898

If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.  
STRANGER 33 FED  
11H  
(325475)

2. Name of Operator  
DEVON ENERGY PRODUCTION COMPANY LP (6197)

9. API Well No.  
90-025-45886

3a. Address  
333 West Sheridan Avenue Oklahoma City OK 73102

3b. Phone No. (include area code)  
(800)583-3866

10. Field and Pool, or Exploratory  
BOBCAT DRAW UPPER WOLFCAMP 98094

4. Location of Well (Report location clearly and in accordance with any State requirements. \*)  
At surface SESE / 205 FSL / 456 FEL / LAT 32.0803039 / LONG -103.4678066  
At proposed prod. zone NENE / 20 FNL / 330 FEL / LAT 32.0941868 / LONG -103.4674143

11. Sec., T. R. M. or Blk. and Survey or Area  
SEC 33 / T25S / R34E / NMP

14. Distance in miles and direction from nearest town or post office\*  
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) 205 feet  
16. No of acres in lease 920  
17. Spacing Unit dedicated to this well 160

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft. 2466 feet  
19. Proposed Depth 12790 feet / 17753 feet  
20. BLM/BIA Bond No. in file FED: CO1104

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3330 feet  
22. Approximate date work will start\* 09/22/2019  
23. Estimated duration 45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- 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 requested by the BLM.

25. Signature (Electronic Submission) Name (Printed/Typed) Date  
Rebecca Deal / Ph: (405)228-8429 11/07/2018

Title  
Regulatory Compliance Professional

Approved by (Signature) (Electronic Submission) Name (Printed/Typed) Date  
Cody Layton / Ph: (575)234-5959 04/18/2019

Title Office  
Assistant Field Manager Lands & Minerals CARLSBAD

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.

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.

GCP Rec 04/20/19

K2  
04/29/19

**APPROVED WITH CONDITIONS**  
Approval Date: 04/18/2019

## INSTRUCTIONS

**GENERAL:** This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

**ITEM I:** If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

**ITEM 4:** Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

**ITEM 14:** Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

**ITEMS 15 AND 18:** If well is to be, or has been directional drilled, give distances for subsurface location of hole in any present or objective productive zone.

**ITEM 22:** Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

**ITEM 24:** If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY:** 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

**PRINCIPAL PURPOSES:** The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

**ROUTINE USE:** Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

**EFFECT OF NOT PROVIDING INFORMATION:** Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

**Additional Operator Remarks**

**Location of Well**

- 1. SHL: SESE / 205 FSL / 456 FEL / TWSP: 25S / RANGE: 34E / SECTION: 33 / LAT: 32.0803039 / LONG: -103.4678066 ( TVD: 0 feet, MD: 0 feet )  
PPP: SESE / 100 FSL / 330 FEL / TWSP: 25S / RANGE: 34E / SECTION: 33 / LAT: 32.080013 / LONG: -103.467403 ( TVD: 12451 feet, MD: 12460 feet )  
BHL: NENE / 20 FNL / 330 FEL / TWSP: 25S / RANGE: 34E / SECTION: 33 / LAT: 32.0941868 / LONG: -103.4674143 ( TVD: 12790 feet, MD: 17753 feet )

**BLM Point of Contact**

Name: Tenille Ortiz  
Title: Legal Instruments Examiner  
Phone: 5752342224  
Email: tortiz@blm.gov

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## Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Devon Energy Production Company LP
<b>LEASE NO.:</b>	Stranger 33 Fed 11H
<b>WELL NAME &amp; NO.:</b>	205'/S & 456'/E
<b>SURFACE HOLE FOOTAGE:</b>	20'/N & 1330'/E
<b>BOTTOM HOLE FOOTAGE</b>	Section 33, T.25 S., R.34 E., NMPM
<b>LOCATION:</b>	Lea County, New Mexico
<b>COUNTY:</b>	Devon Energy Production Company LP

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input checked="" type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

#### Primary Casing Design:

1. The 10-3/4 inch surface casing shall be set at approximately **940 feet** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**Operator has proposed to pump down 10-3/4" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

**Alternate Design:**

4. The 13-3/8 inch surface casing shall be set at approximately **940 feet** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

- e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
- f. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- h. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

5. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Cement excess is less than 25%, more cement might be required.**

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- d. Second stage above DV tool:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.  
**Cement excess is less than 25%, more cement might be required.**

**Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.**

6. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.  
**Cement excess is less than 25%, more cement might be required.**

### **C. PRESSURE CONTROL**

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

#### **Option 1:**

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

#### **Option 2:**

1. Operator has proposed 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 **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

## GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Chaves and Roosevelt Counties  
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.  
During office hours call (575) 627-0272.  
After office hours call (575)

Eddy County  
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

Lea County  
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

**D. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Production Company LP
WELL NAME & NO.:	Stranger 33 Fed 11H
SURFACE HOLE FOOTAGE:	205'/S & 456'/E
BOTTOM HOLE FOOTAGE:	20'/N & 1330'/E
LOCATION:	Section 33, T.25 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Hydrology
  - Range
  - Cultural
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### **Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

### **Timing Limitation Exceptions:**

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

### **Hydrology:**

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Electric Lines: Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion.

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Fence Requirement

Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

EXHIBIT NO. 1

Date of Issue:

1/28/2019

**Bureau of Land Management, Carlsbad Field Office**

620 E. Greene Street Carlsbad, NM 88220

P020-2019-0383-

EA

Cultural and Archaeological Resources

BLM Report No.

**NOTICE OF STIPULATIONS**

19-0320



**Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.**

<b>Project Name:</b>	Crawford Buried Pipeline Right-of-Way
	<b>1). A 3-day preconstruction call-in notification.</b> Contact BLM Inspection and Enforcement at
<b>Required</b>	<b>2. Professional archaeological monitoring.</b> Contact your BLM project archaeologist at for assistance.
A. <input checked="" type="checkbox"/>	These stipulations must be given to your monitor at least <b>5 days</b> prior to the start of construction.
B. <input checked="" type="checkbox"/>	No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.
	<b>3. Cultural site barrier fencing.</b> (Your monitor will assist you).
A. <input type="checkbox"/>	<b>A temporary site protection barrier(s)</b> shall be erected prior to all ground-disturbing activities. The minimum barrier(s) shall consist of upright wooden survey lath spaced no more than ten (10) feet apart and marked with blue ribbon flagging or blue paint. There shall be no construction activities or vehicular traffic past the barrier(s) at any time.
B. <input type="checkbox"/>	<b>A permanent, 4-strand barbed wire fence</b> strung on standard "T-posts" shall be erected prior to all ground-disturbing activities. No construction activities or vehicle traffic are allowed past the fence.
<b>Required</b>	<b>4. The archaeological monitor shall:</b>
A. <input checked="" type="checkbox"/>	Observe all ground-disturbing activities within 100 feet of cultural site LA 126119.
B. <input checked="" type="checkbox"/>	Submit a brief monitoring report within 30 days of completion of monitoring.
C. <input checked="" type="checkbox"/>	If there is a road along the fence line through the site, make sure the road is not driven on within the site boundaries.
D. <input type="checkbox"/>	
<b>Other:</b>	If subsurface cultural resources are encountered during the monitoring, all activities shall cease and a BLM-CFO archaeologist shall be notified immediately.  <b>IF THE CONTRACT ARCHAEOLOGIST DOES NOT KNOW WHERE THE SITE(S) ARE LOCATED AT PLEASE COME BY THE CARLSBAD BLM AND MAPS AND OTHER DATA WILL BE PROVIDED UPON REQUEST TO THE CONTRACT ARCHAEOLOGIST</b>

**Site Protection and Employee Education:** It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands.

For assistance contact:

Aaron Whaley (575) 234-5986  
 Elia Perez (575)-234-6231  
 Garrett Leitermann (575) 234-2239  
 Bruce Boeke (575) 234-5917



## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

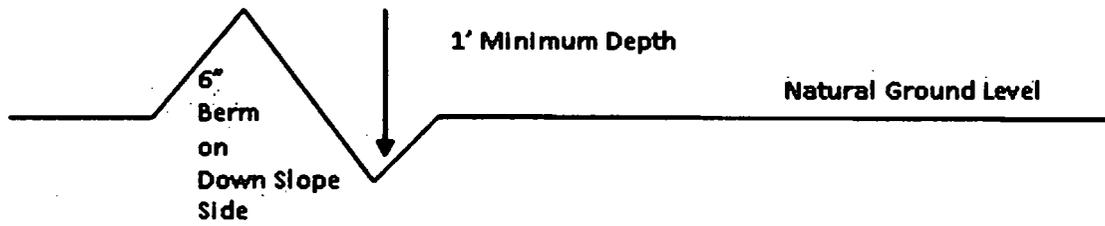
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

#### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

#### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

#### Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

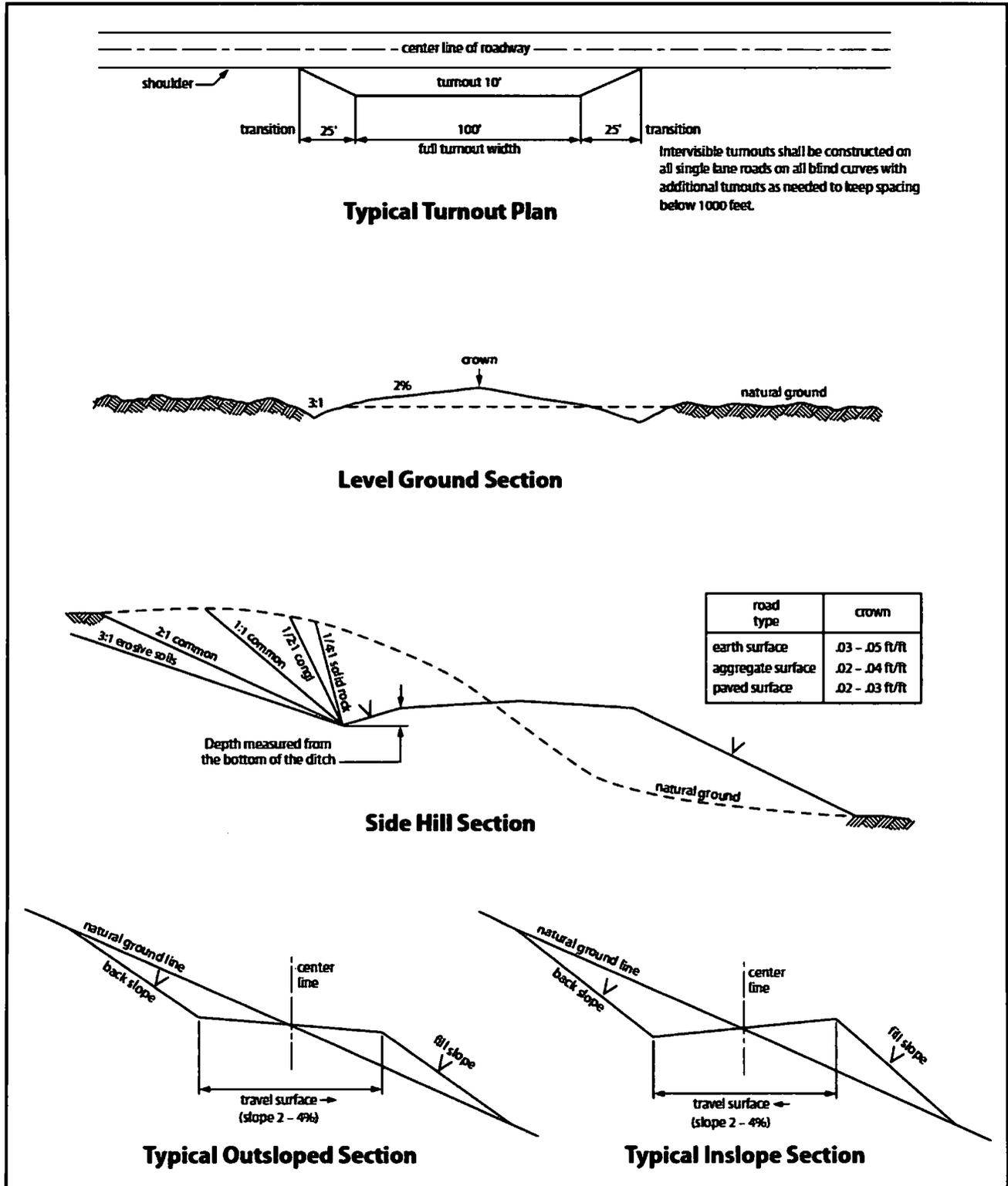


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **VII. PRODUCTION (POST DRILLING)**

### **A. WELL STRUCTURES & FACILITIES**

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

**STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES**

A copy of the application (Grant/Sundry Notice) and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 et. seq., from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 et. seq., and from other applicable environmental statutes.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to

the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is Shale Green, Munsell Soil Color Chart Number 5Y 4/2.

8. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

9. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office (575-234-5972).

10. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

11. Once the site is no longer in service or use, the site must undergo final abandonment. At final abandonment, the site and access roads must undergo "final" reclamation so that the character and productivity of the land are restored. Earthwork for final reclamation must be completed within six (6) months of the abandonment of the site. All pads and facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact. After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

12. The holder shall stockpile an adequate amount of topsoil where blading occurs. The topsoil to be stripped is approximately   6   inches in depth. The topsoil will be segregated from other spoil piles. The topsoil will be used for final reclamation.

13. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |                                                        |                                                  |
|--------------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> seed mixture 1                | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2                | <input type="checkbox"/> seed mixture 4          |
| <input checked="" type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

14. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

15. Open-topped Tanks - The operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps

16. The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

17. Open-Vent Exhaust Stack Enclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

18. Containment Structures - Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

19. Special Stipulations:

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.

- Any water erosion that may occur due to the construction of the well pad during the life of the well will be corrected within two weeks and proper measures will be taken to prevent future erosion.

#### Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from permanent engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **B. PIPELINES**

### BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless

the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.
7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:
- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
  - Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
  - The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)
8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.
9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.
11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |                                                        |                                                  |
|--------------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> seed mixture 1                | <input type="checkbox"/> seed mixture 3          |
| <input type="checkbox"/> seed mixture 2                | <input type="checkbox"/> seed mixture 4          |
| <input checked="" type="checkbox"/> seed mixture 2/LPC | <input type="checkbox"/> Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or

other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

19. Special Stipulations:

**Lesser Prairie-Chicken**

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

**C. ELECTRIC LINES**

**STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b.

A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply

with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

**Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **VIII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce

the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **IX. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

### Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



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

# Operator Certification Data Report

04/24/2019

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently 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 the company I represent, 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.*

**NAME:** Rebecca Deal

**Signed on:** 11/07/2018

**Title:** Regulatory Compliance Professional

**Street Address:** 333 West Sheridan Avenue

**City:** Oklahoma City

**State:** OK

**Zip:** 73102

**Phone:** (405)228-8429

**Email address:** Rebecca.Deal@dvn.com

## Field Representative

**Representative Name:** Travis Phibbs

**Street Address:** 333 W SHERIDAN AVE

**City:** OKC

**State:** OK

**Zip:** 73102

**Phone:** (575)748-9929

**Email address:** travis.phibbs@dvn.com



APD ID: 10400036115

Submission Date: 11/07/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: STRANGER 33 FED

Well Number: 11H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

**Section 1 - General**

APD ID: 10400036115

Tie to previous NOS?

Submission Date: 11/07/2018

BLM Office: CARLSBAD

User: Rebecca Deal

Title: Regulatory Compliance  
Professional

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM113898

Lease Acres: 920

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: DEVON ENERGY PRODUCTION COMPANY LP

Operator letter of designation:

**Operator Info**

Operator Organization Name: DEVON ENERGY PRODUCTION COMPANY LP

Operator Address: 333 West Sheridan Avenue

Zip: 73102

Operator PO Box:

Operator City: Oklahoma City State: OK

Operator Phone: (800)583-3866

Operator Internet Address:

**Section 2 - Well Information**

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: STRANGER 33 FED

Well Number: 11H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: BOBCAT DRAW

Pool Name: UPPER  
WOLFCAMP

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: STRANGER 33 FED

Well Number: 11H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: STRANGER 33 WELLPAD

Number: 5

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town:

Distance to nearest well: 2466 FT

Distance to lease line: 205 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: STRANGER\_33\_FED\_11H\_C\_102\_20181107145103.pdf

Well work start Date: 09/22/2019

Duration: 45 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	205	FSL	456	FEL	25S	34E	33	Aliquot SESE	32.0803039	-103.4678066	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113898	3330	0	0
KOP Leg #1	100	FSL	330	FEL	25S	34E	33	Aliquot SESE	32.079875	-103.467404	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113898	-8887	12219	12217
PPP Leg #1	100	FSL	330	FEL	25S	34E	33	Aliquot SESE	32.080013	-103.467404	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113898	-9121	12460	12451

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** STRANGER 33 FED

**Well Number:** 11H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	100	FNL	330	FEL	25S	34E	33	Aliquot NENE	32.09396 7	- 103.4674 14	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113898	- 946 0	176 72	127 90
BHL Leg #1	20	FNL	330	FEL	25S	34E	33	Aliquot NENE	32.09418 68	- 103.4674 143	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 113898	- 946 0	177 53	127 90



APD ID: 10400036115

Submission Date: 11/07/2018

Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: STRANGER 33 FED

Well Number: 11H

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
1	---	3348	0	0	SANDSTONE, OTHER : SURFACE	NONE	No
2	RUSTLER	2538	810	810	SANDSTONE	NONE	No
3	TOP SALT	2146	1202	1202	SALT	NONE	No
4	BASE OF SALT	-1972	5320	5320	LIMESTONE	NONE	No
5	BELL CANYON	-2047	5395	5395	SANDSTONE	NATURAL GAS,OIL	No
6	CHERRY CANYON	-3264	6612	6612	SANDSTONE	NATURAL GAS,OIL	No
7	BRUSHY CANYON	-4593	7941	7941	SANDSTONE	NATURAL GAS,OIL	No
8	BONE SPRINGS	-5949	9297	9297	SHALE	NATURAL GAS,OIL	No
9	BONE SPRING 1ST	-7047	10395	10395	SANDSTONE	NATURAL GAS,OIL	No
10	BONE SPRING 2ND	-7599	10947	10947	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 3RD	-8677	12025	12025	SANDSTONE	NATURAL GAS,OIL	No
12	WOLFCAMP	-9132	12480	12480	SHALE	NATURAL GAS,OIL	Yes
13	STRAWN	-10606	13954	13954	LIMESTONE	NATURAL GAS,OIL	No

**Section 2 - Blowout Prevention**

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** STRANGER 33 FED

**Well Number:** 11H

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

**Rating Depth:** 12790

**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. Devon requests a variance to run a 5M annular on a 10M BOP system. See separately attached variance request and support documents in AFMSS.

**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:**

10M\_BOPE\_CHK\_DR\_CLS\_RKL\_20190321082627.pdf

**BOP Diagram Attachment:**

10M\_BOPE\_CHK\_DR\_CLS\_RKL\_20190321082637.pdf

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

**Rating Depth:** 12748

**Equipment:** BOP/BOPE will be installed per Onshore Oil & Gas Order #2 requirements prior to drilling below 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:**

5M\_BOPE\_CK\_20181009072557.pdf

**BOP Diagram Attachment:**

5M\_BOPE\_CK\_20181009072606.pdf

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Operator Name: DEVON ENERGY PRODUCTION COMPANY LP

Well Name: STRANGER 33 FED

Well Number: 11H

**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	820	0	820			820	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	12219	0	12217			12219	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	12219	12930	12217	12748			711	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	17672	0	12790			17672	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):

Surf\_Csg\_Ass\_20181009072657.pdf

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** STRANGER 33 FED

**Well Number:** 11H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Int\_Csg\_Ass\_20181009072743.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Int\_Csg\_Ass\_20181009073352.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Prod\_Csg\_Ass\_20181106101143.pdf

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**Section 4 - Cement**

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** STRANGER 33 FED

**Well Number:** 11H

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		N/A	0

SURFACE	Lead		0	820	510	1.34	14.8	684	50	C	1% Calcium Chloride
---------	------	--	---	-----	-----	------	------	-----	----	---	---------------------

INTERMEDIATE	Lead		0	8930	733	3.27	9	2395	30	TUNED	TUNED LIGHT
INTERMEDIATE	Tail		8930	12930	607	1.6	13.2	971	30	H	Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
PRODUCTION	Lead		12730	17672	388	1.33	13.2	516	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:** STRANGER 33 FED

**Well Number:** 11H

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
1293 0	1767 2	OIL-BASED MUD	10	12				12			
0	820	SPUD MUD	8.33	9				2			
820	1293 0	SALT SATURATED	9	10				2			
820	1293 0	SALT SATURATED	9	10				2			

### 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:** 7000

**Anticipated Surface Pressure:** 4186.2

**Anticipated Bottom Hole Temperature(F):** 180

**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:**

Stranger\_33\_Fed\_11H\_H2S\_Plan\_20181107153958.pdf

**Operator Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Well Name:** STRANGER 33 FED

**Well Number:** 11H

## Section 8 - Other Information

### Proposed horizontal/directional/multi-lateral plan submission:

Stranger\_33\_Fed\_11H\_Dir\_Svy\_20181107154020.pdf

Stranger\_33\_Fed\_11H\_Plot\_20181107154021.pdf

### Other proposed operations facets description:

DRILLING PLAN

DIRECTIONAL SURVEY

PLOT

MULTI-BOWL WELLHEAD

MULTI-BOWL VERBIAGE

GAS CAPTURE PLAN

CLOSED LOOP DESIGN

CO-FLEX VARIANCE

SPUDDER RIG DOCUMENT

SPEC SHEETS

ANNULAR VARIANCE REQUEST - DOC & SCHEMATIC

### Other proposed operations facets attachment:

MB\_Wellhd\_10M\_20180823120206.pdf

Spudder\_Rig\_Info\_20180823120206.pdf

MB\_Wellhd\_10M\_2\_20180823120321.PDF

Clsd\_Loop\_20180823120203.pdf

Stranger\_33\_Fed\_WP5\_GCP\_Form\_20181107141246.pdf

MB\_Verb\_10M\_20190321083103.pdf

Stranger\_33\_Fed\_11H\_Drilling\_Document\_R1\_20190321085236.pdf

5.5\_20\_P110\_EC\_VAMSG\_20190321085359.pdf

7.625\_29.70\_P110\_Flushmax\_20190321085359.pdf

8.625\_32.00\_P110HSCY\_TLW\_20190321085400.PDF

10.750\_40.50\_J55\_USS\_20190321085401.PDF

13.375\_48\_H40\_20190321085401.pdf

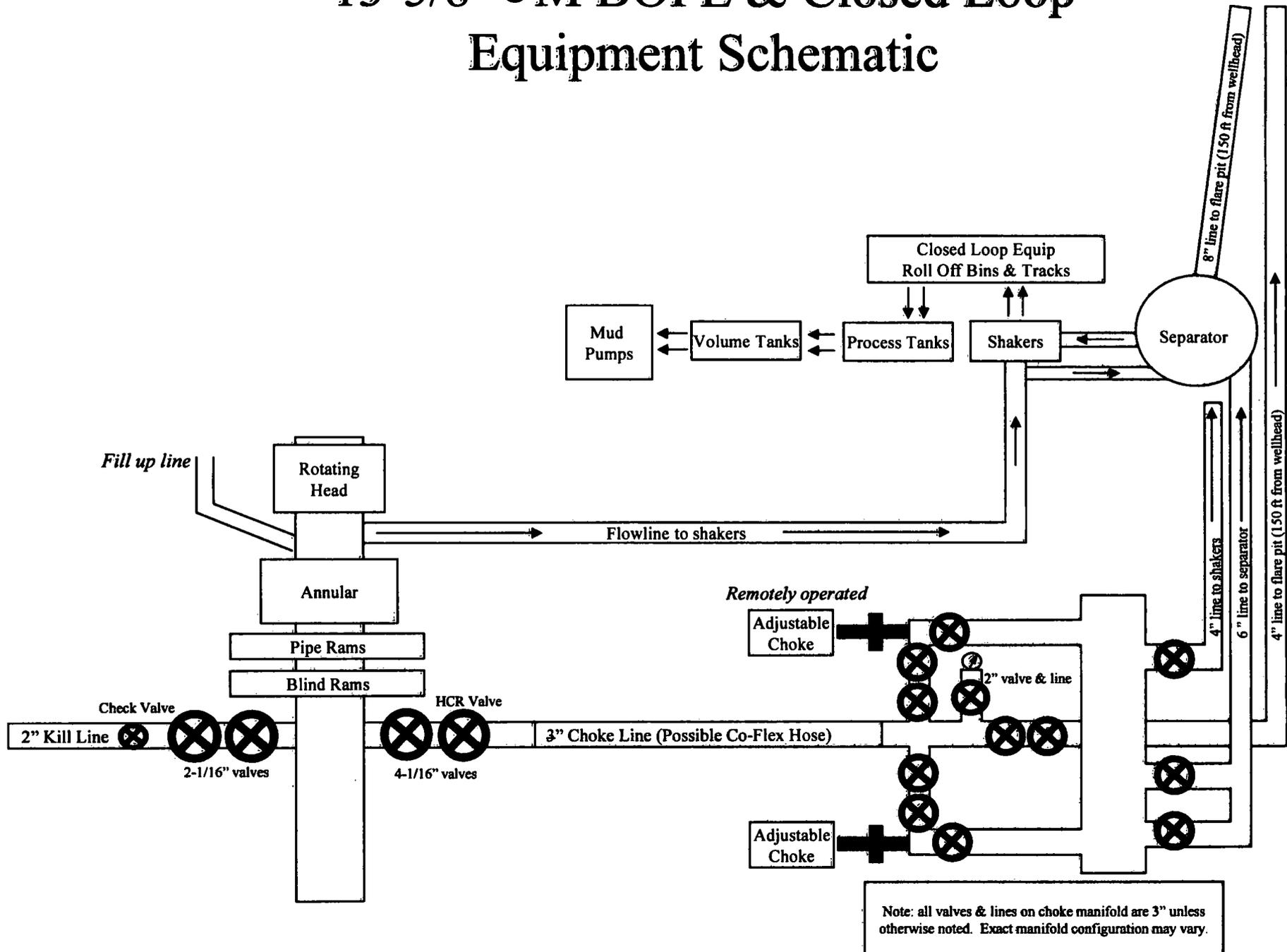
### Other Variance attachment:

Co\_flex\_20180823120220.pdf

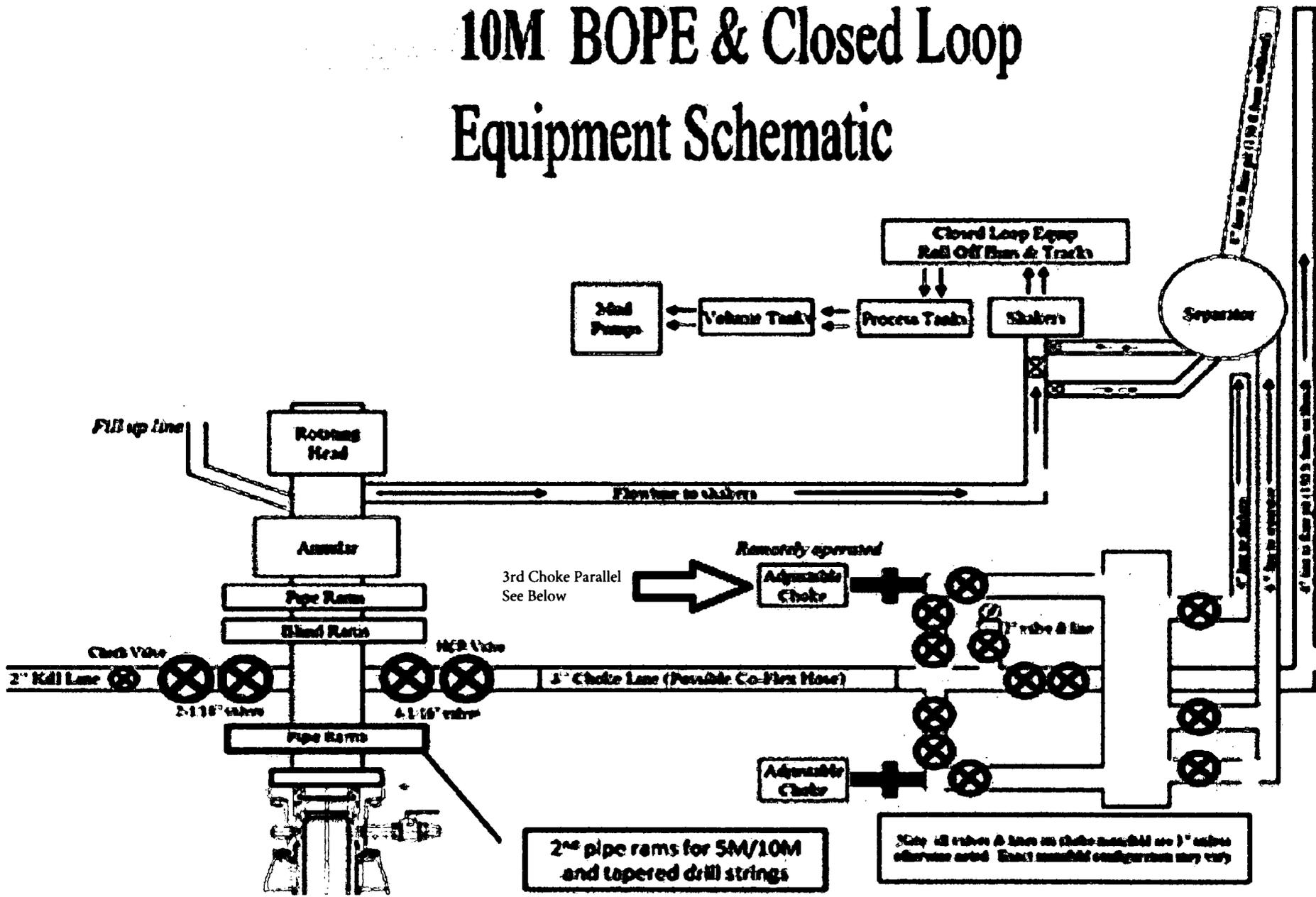
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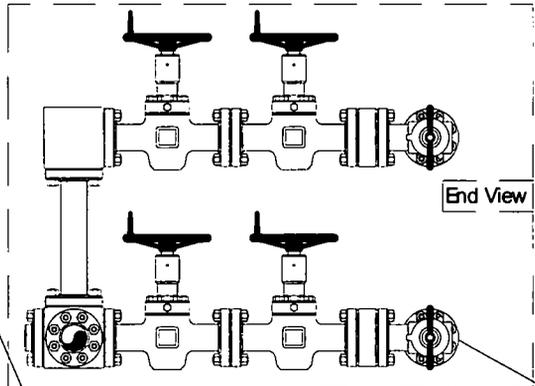
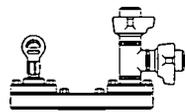
Annular\_Preventer\_Summary\_20190321085448.pdf

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

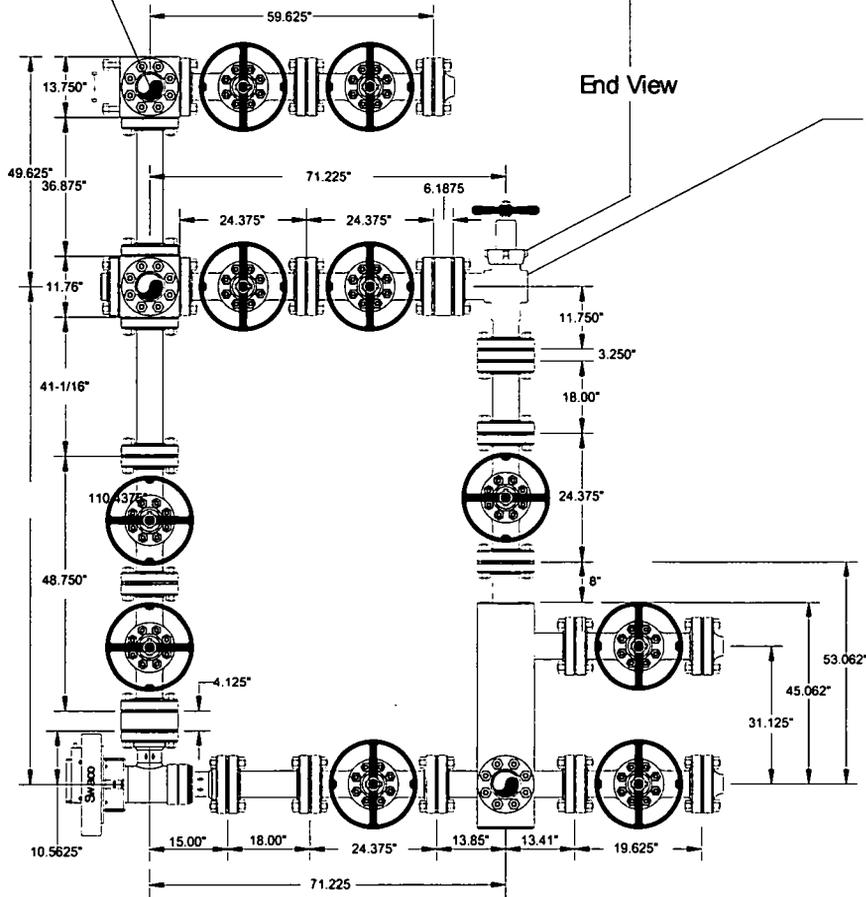


# 10M BOPE & Closed Loop Equipment Schematic



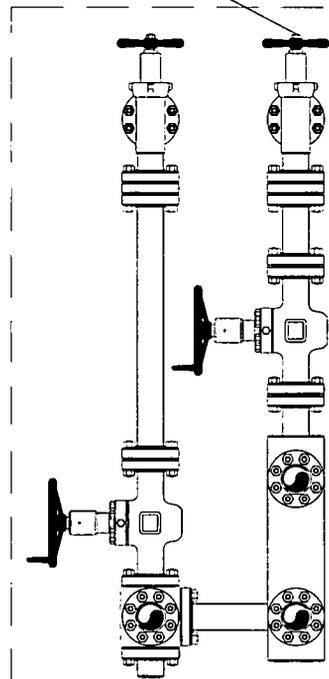


End View



End View

Sde View



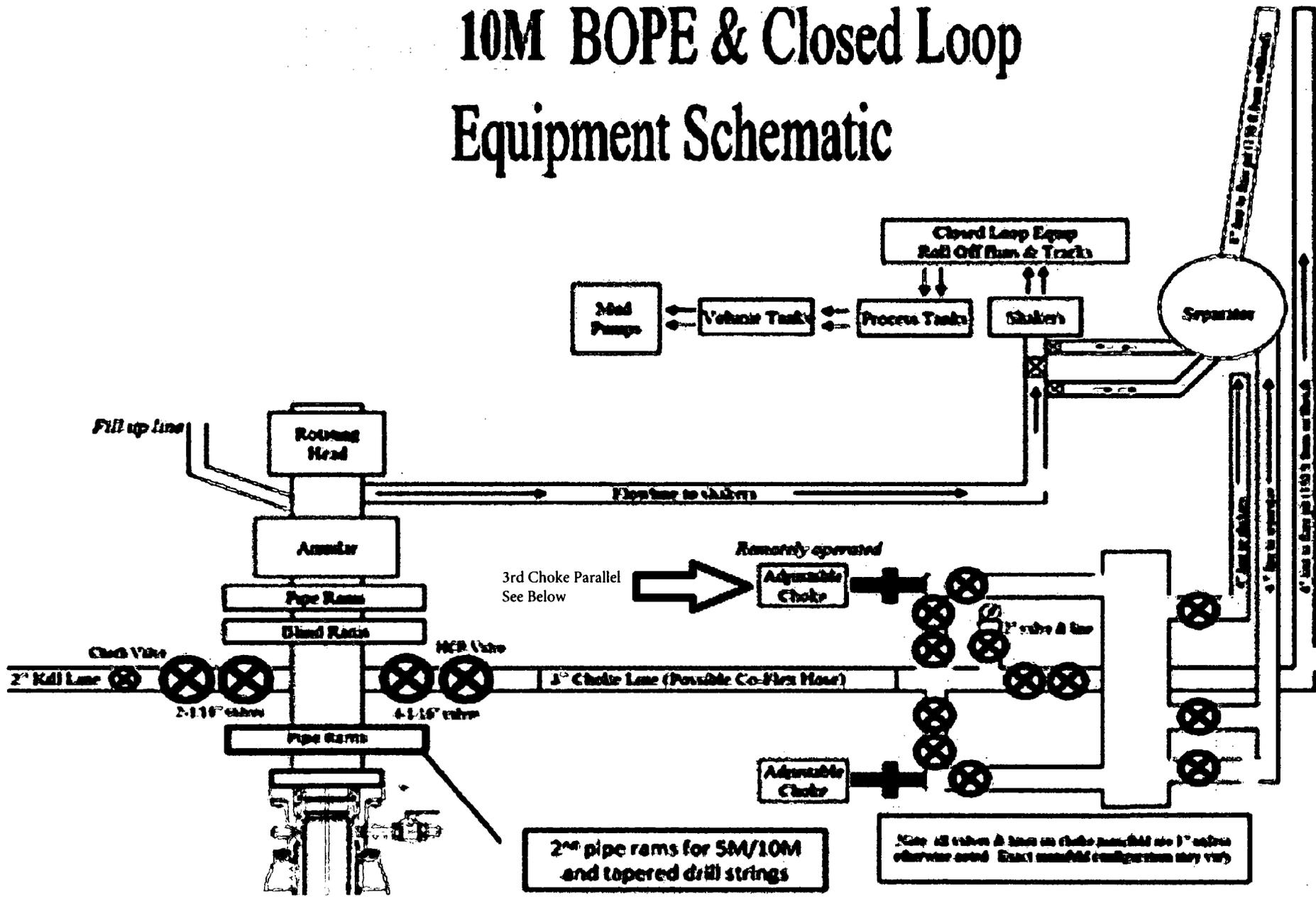
Sde View

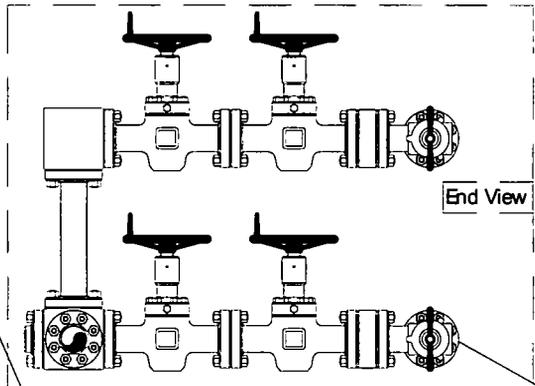
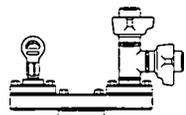
Helmerich & Payne  
Fig 282



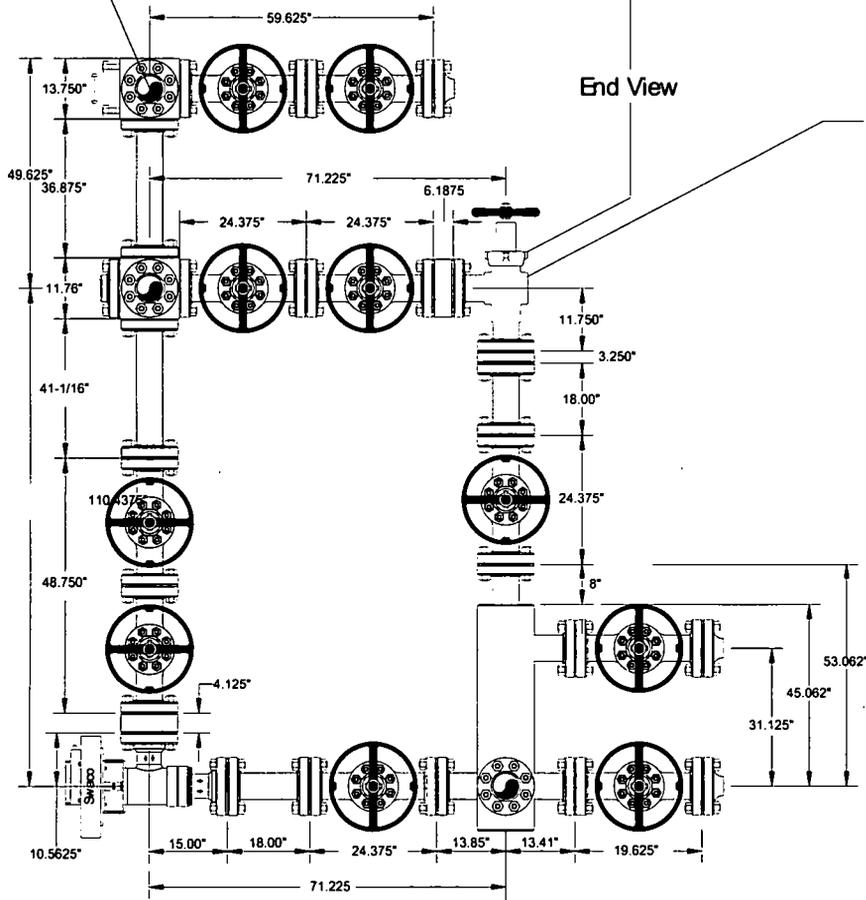
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# 10M BOPE & Closed Loop Equipment Schematic



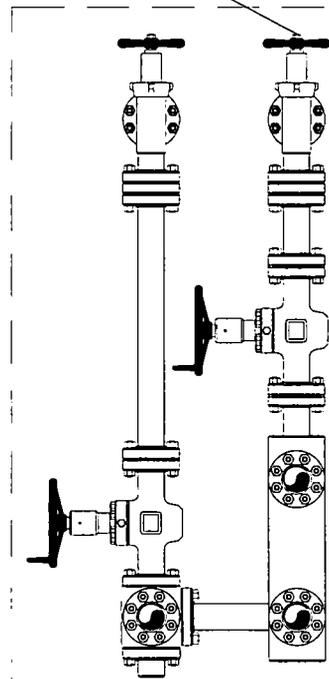


End View



End View

Side View



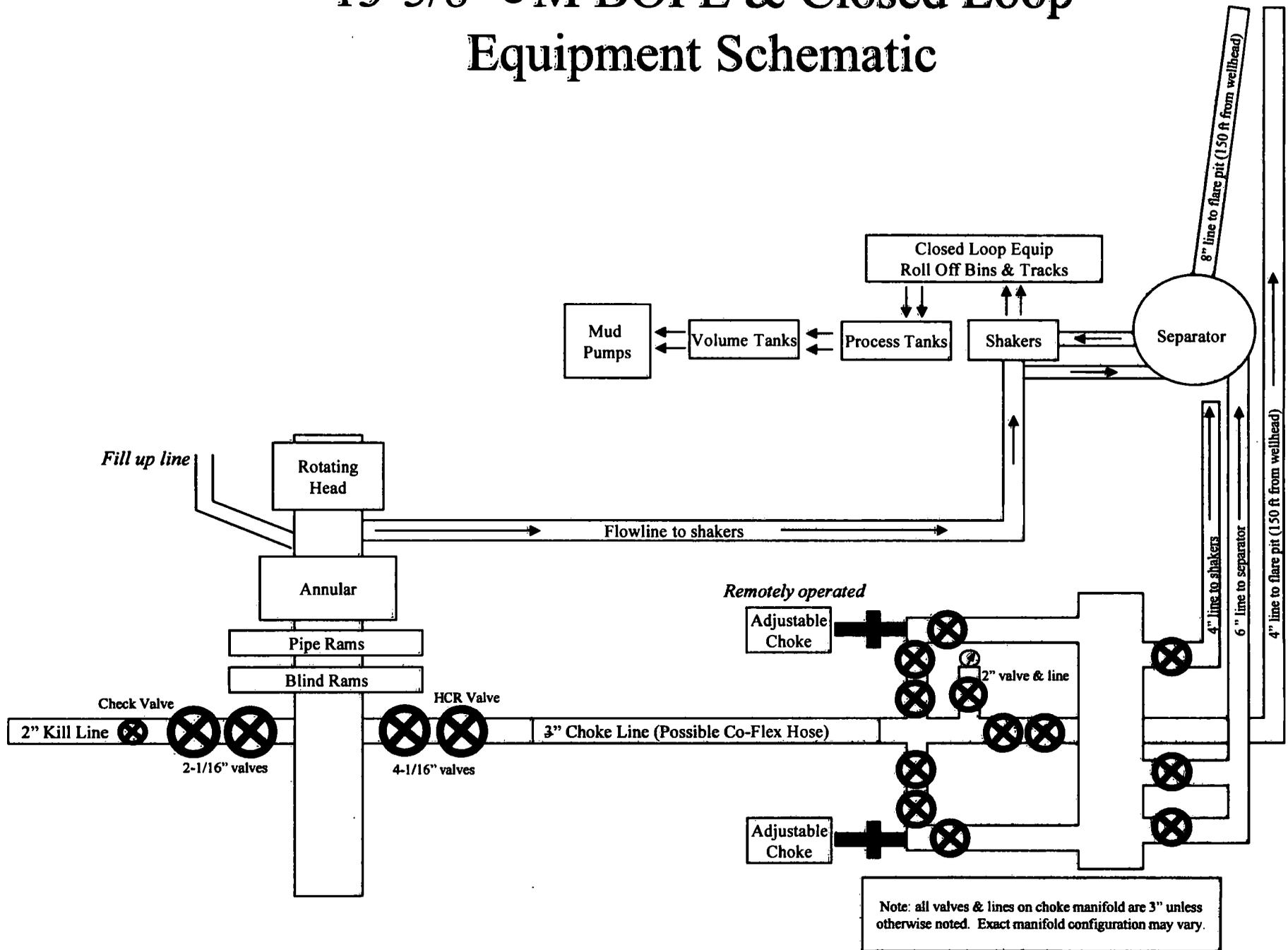
Side View

Helmerich & Payne  
Fig 282

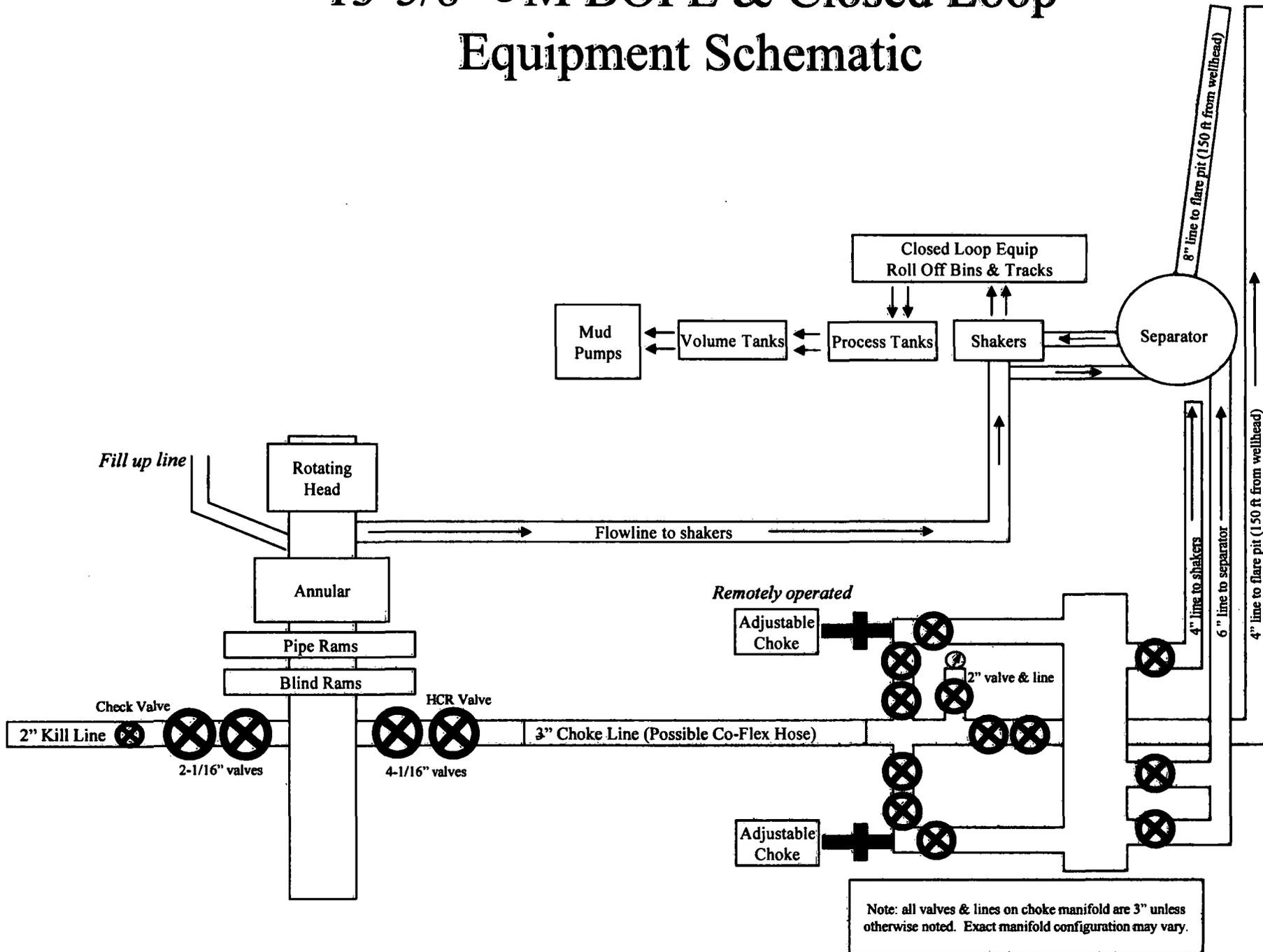
**CAMERON**

Name	Jeanette	Date	7-19-06	Working Pressure	#	J-5132-E
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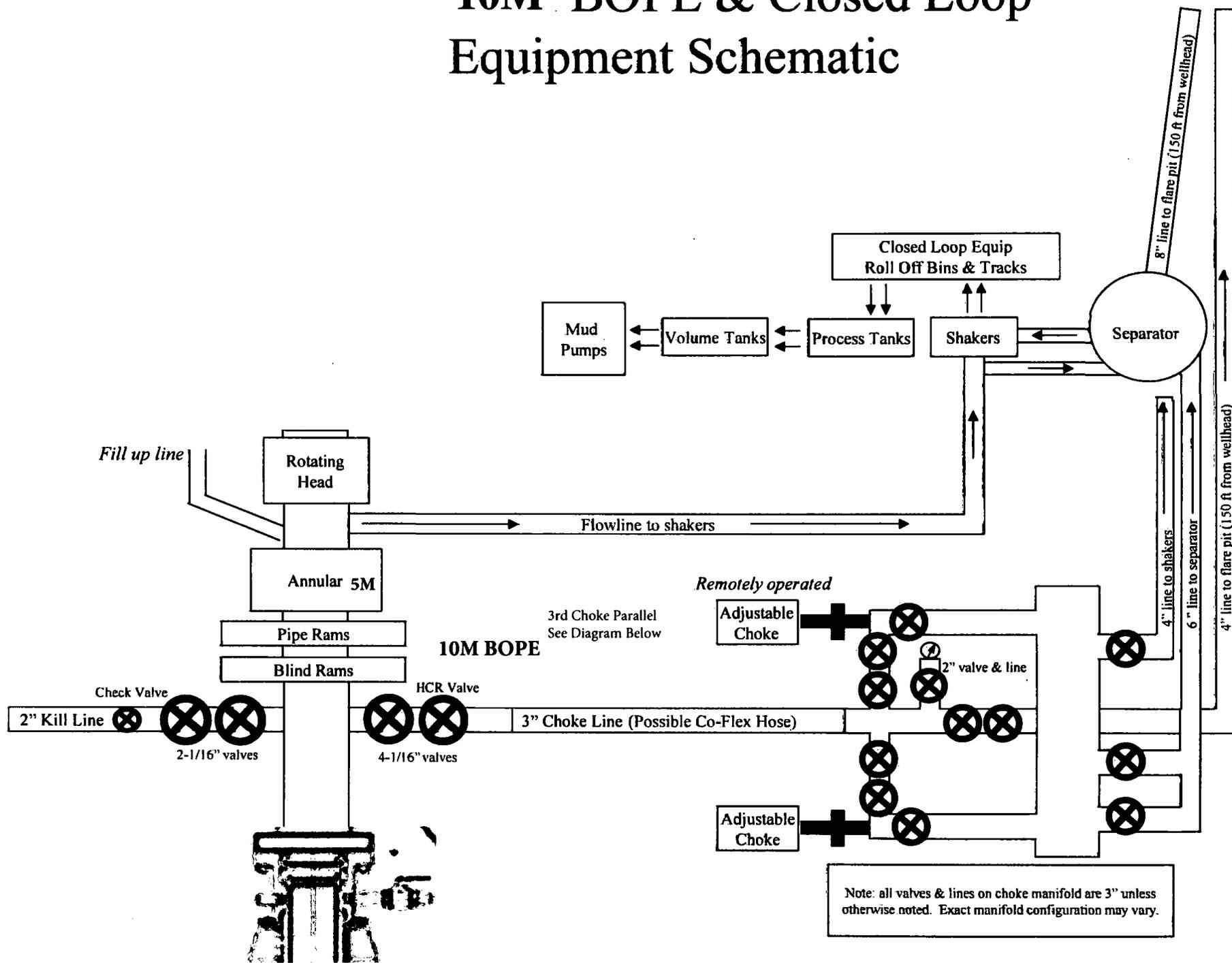
# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

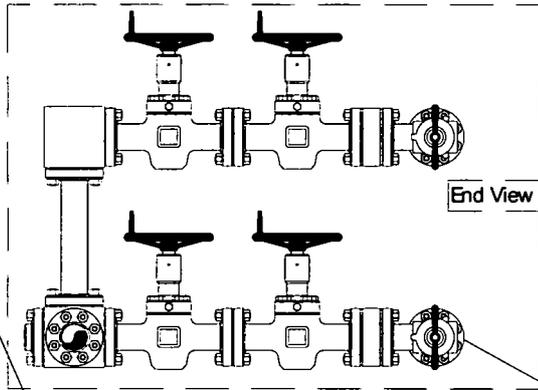
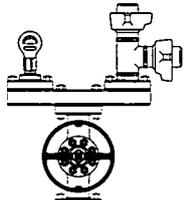


# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

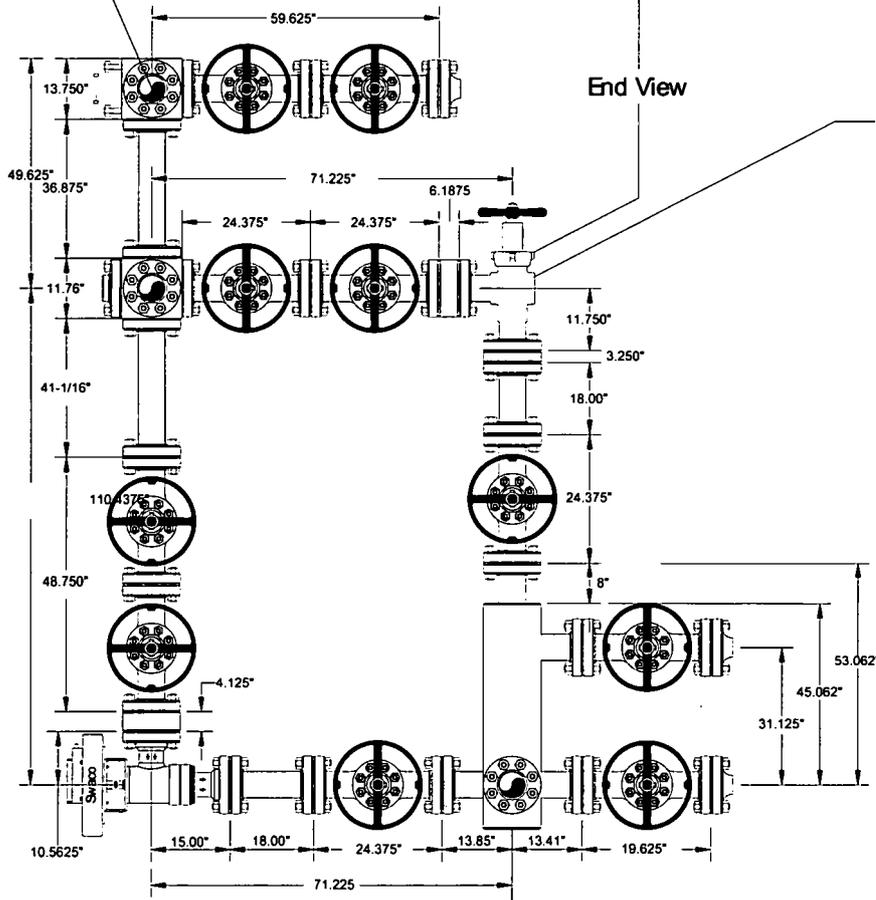


# 10M BOPE & Closed Loop Equipment Schematic



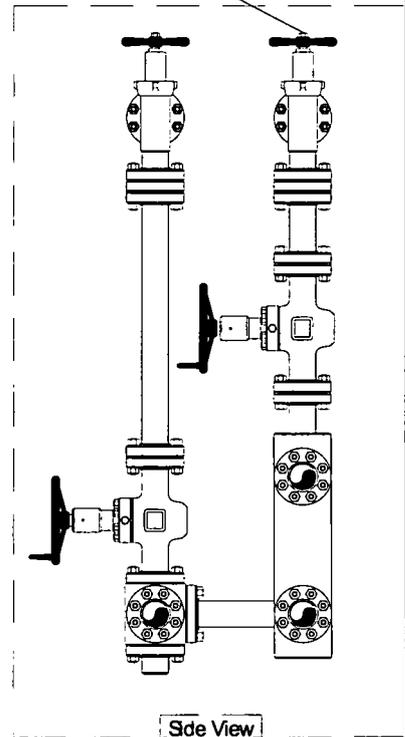


End View



End View

Side View



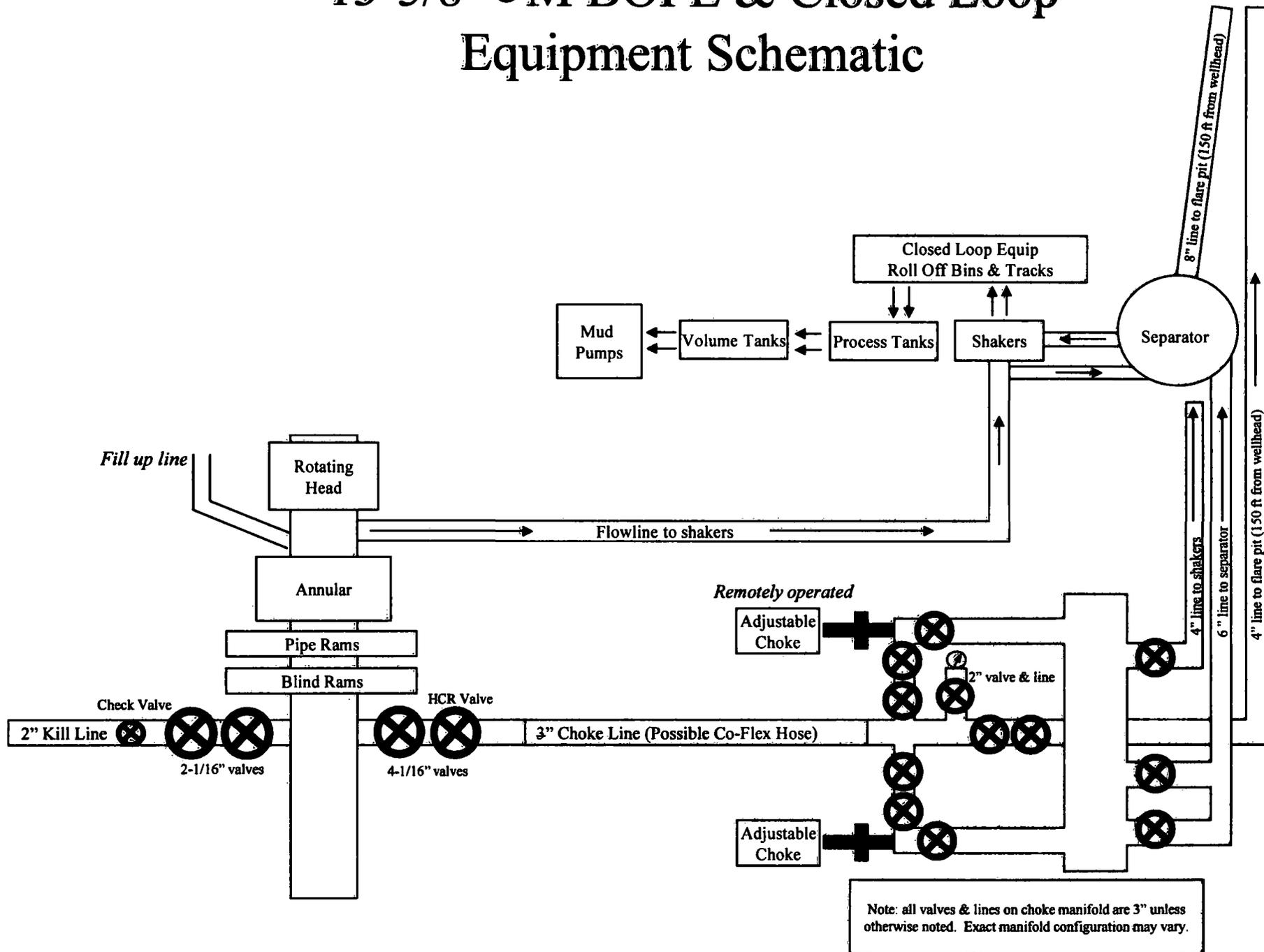
Side View

Helmerich & Payne  
Fig 282

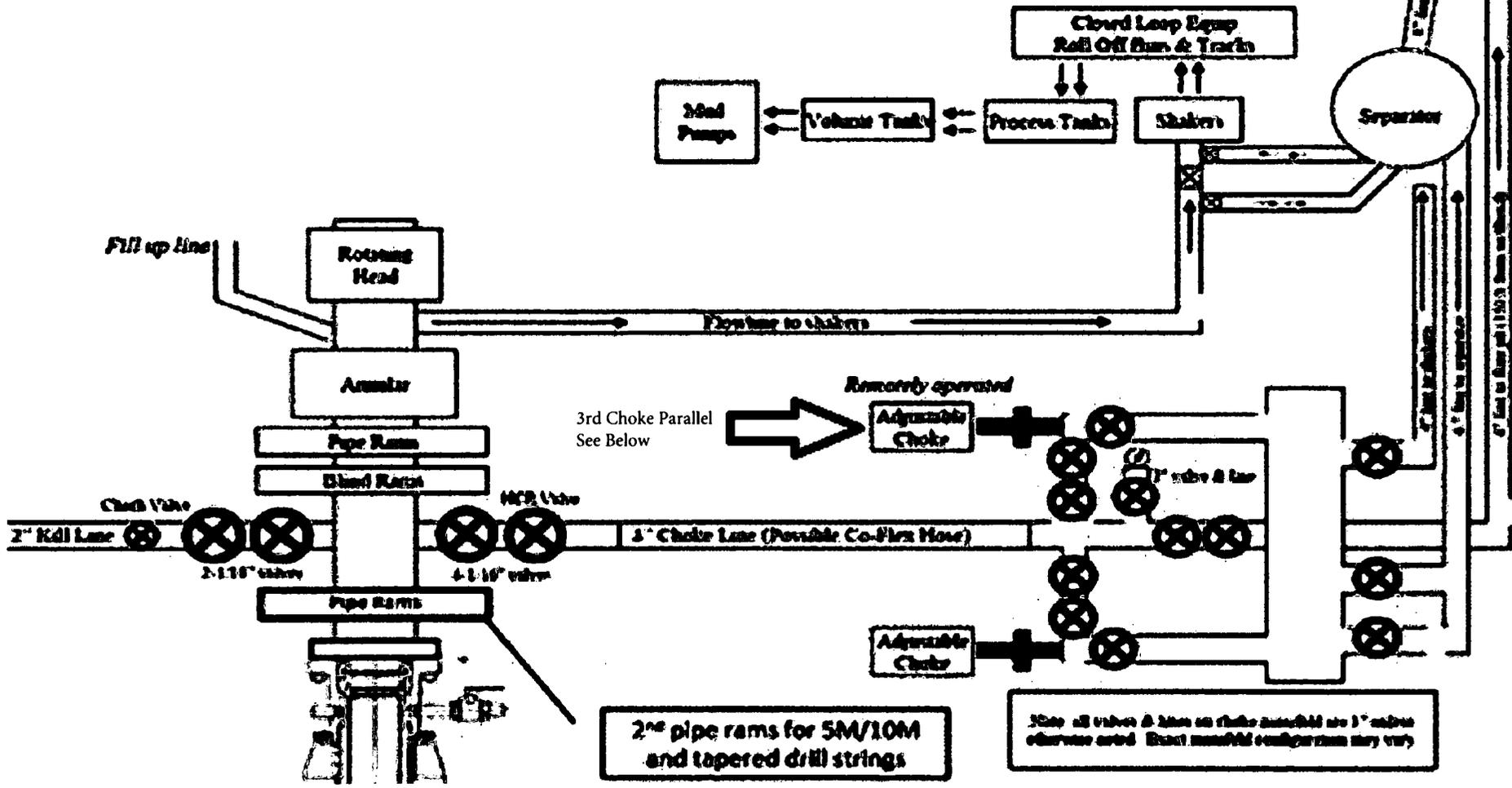


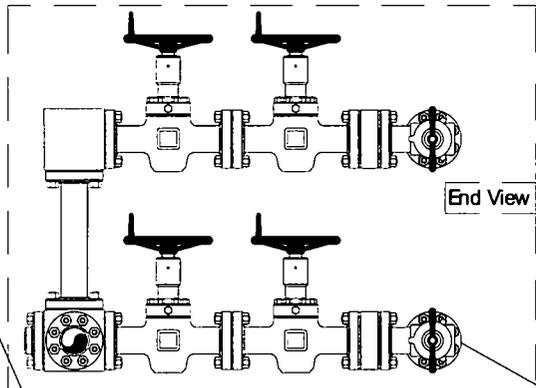
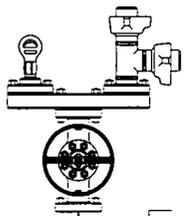
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# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

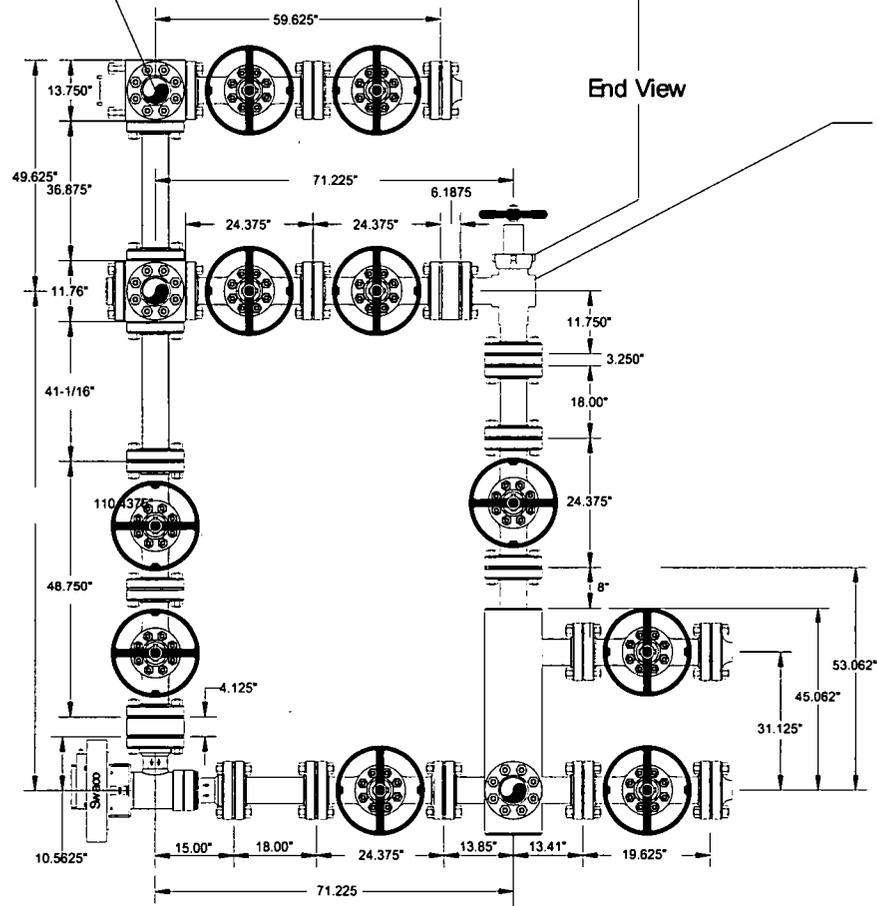


# 10M BOPE & Closed Loop Equipment Schematic



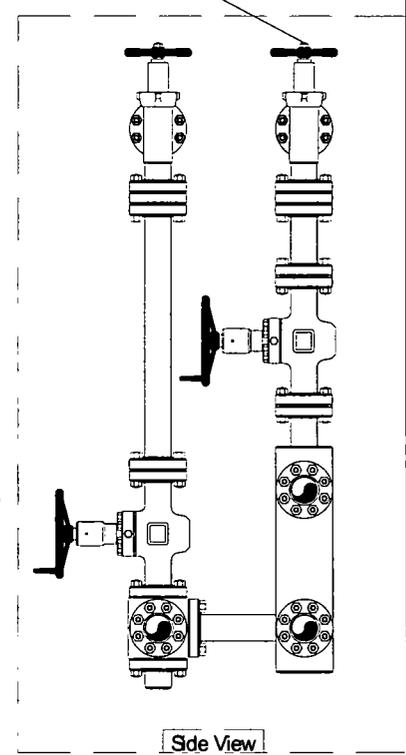


End View



End View

Side View



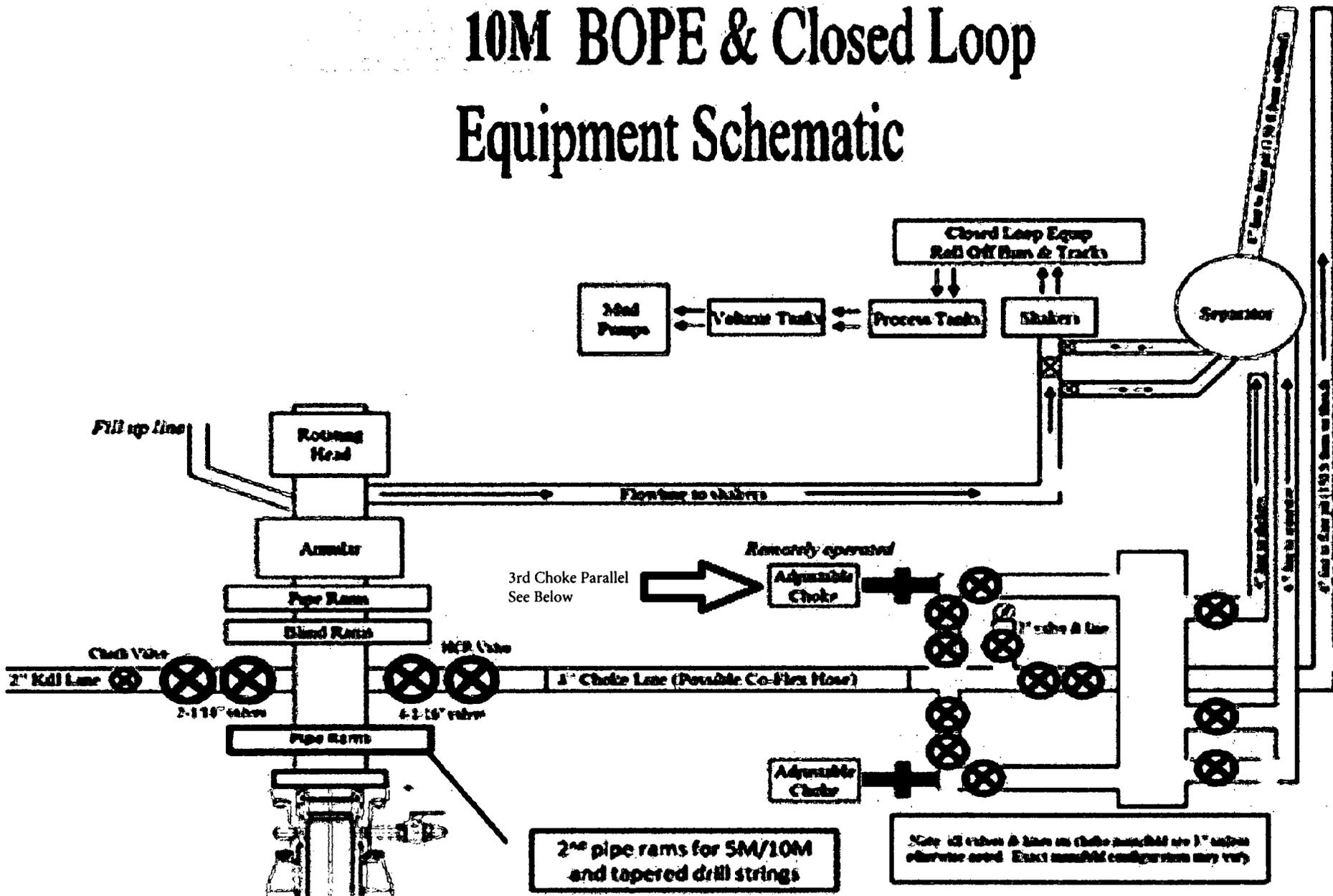
Side View

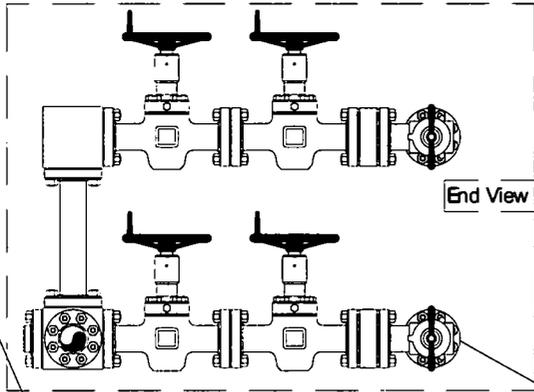
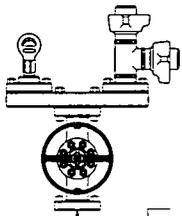
Helmerich & Payne  
Rg 282



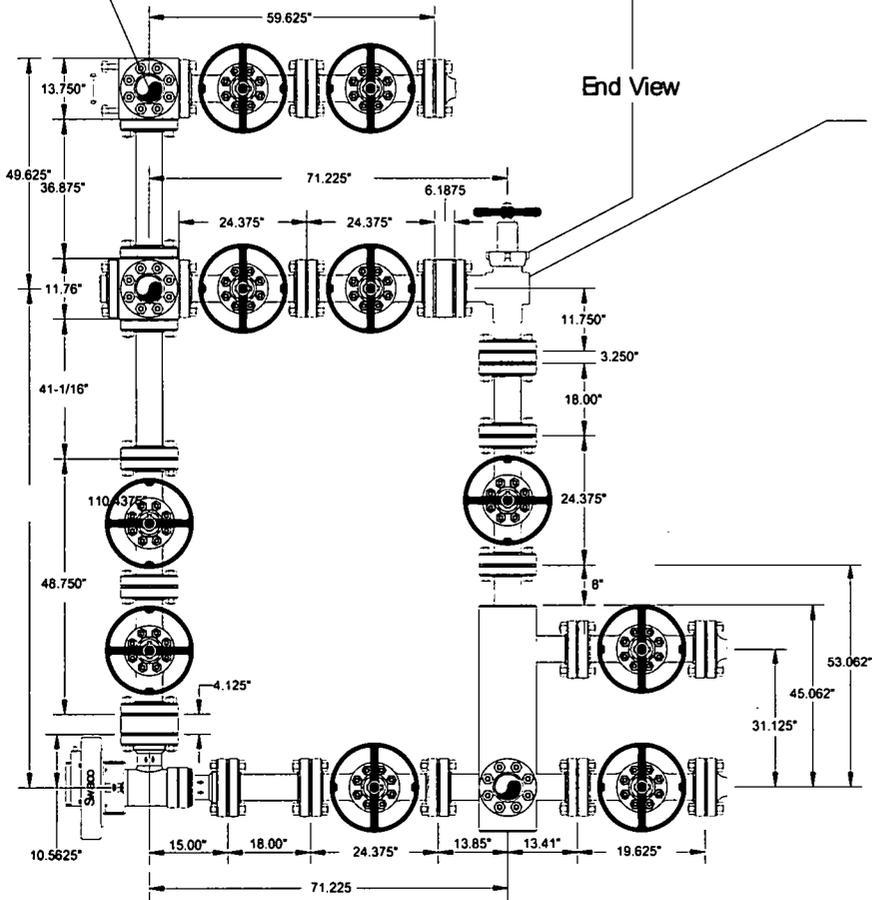
Name: Jeanette	Date: 7-19-06	Working Pressure:	# J5132-E
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# 10M BOPE & Closed Loop Equipment Schematic



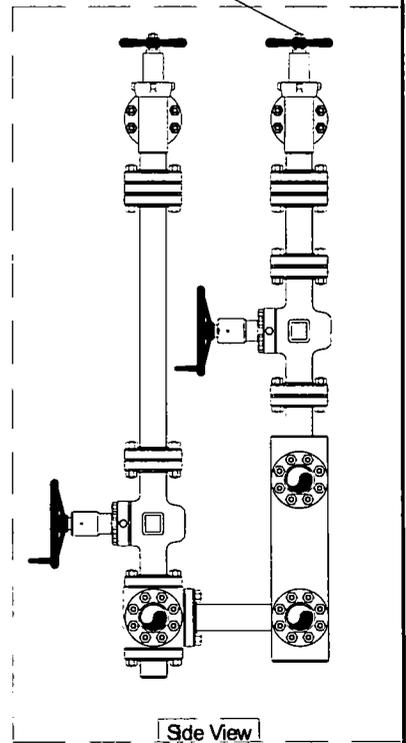


End View



End View

Side View



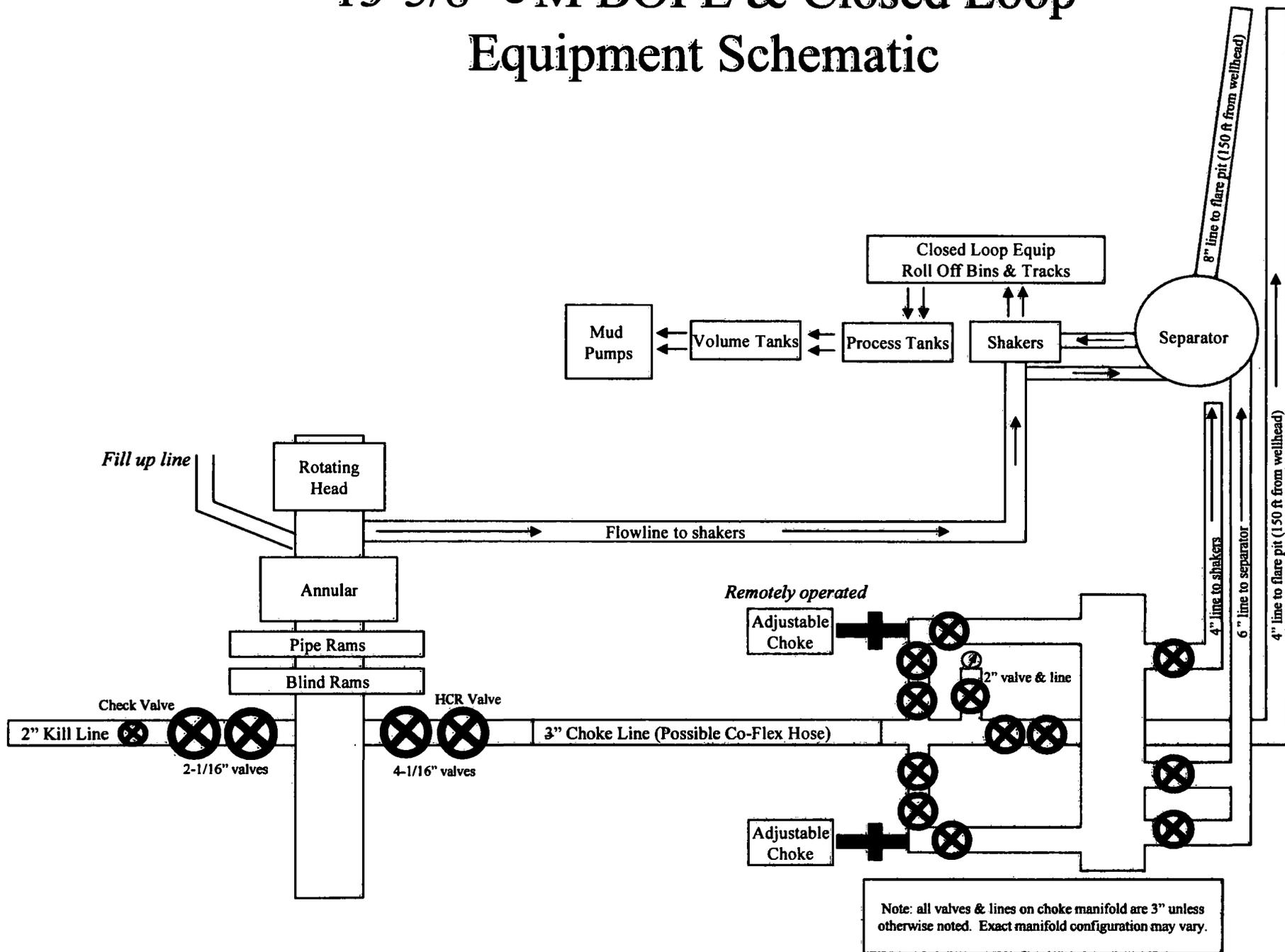
Side View

Helmerich & Payne  
Fig 282

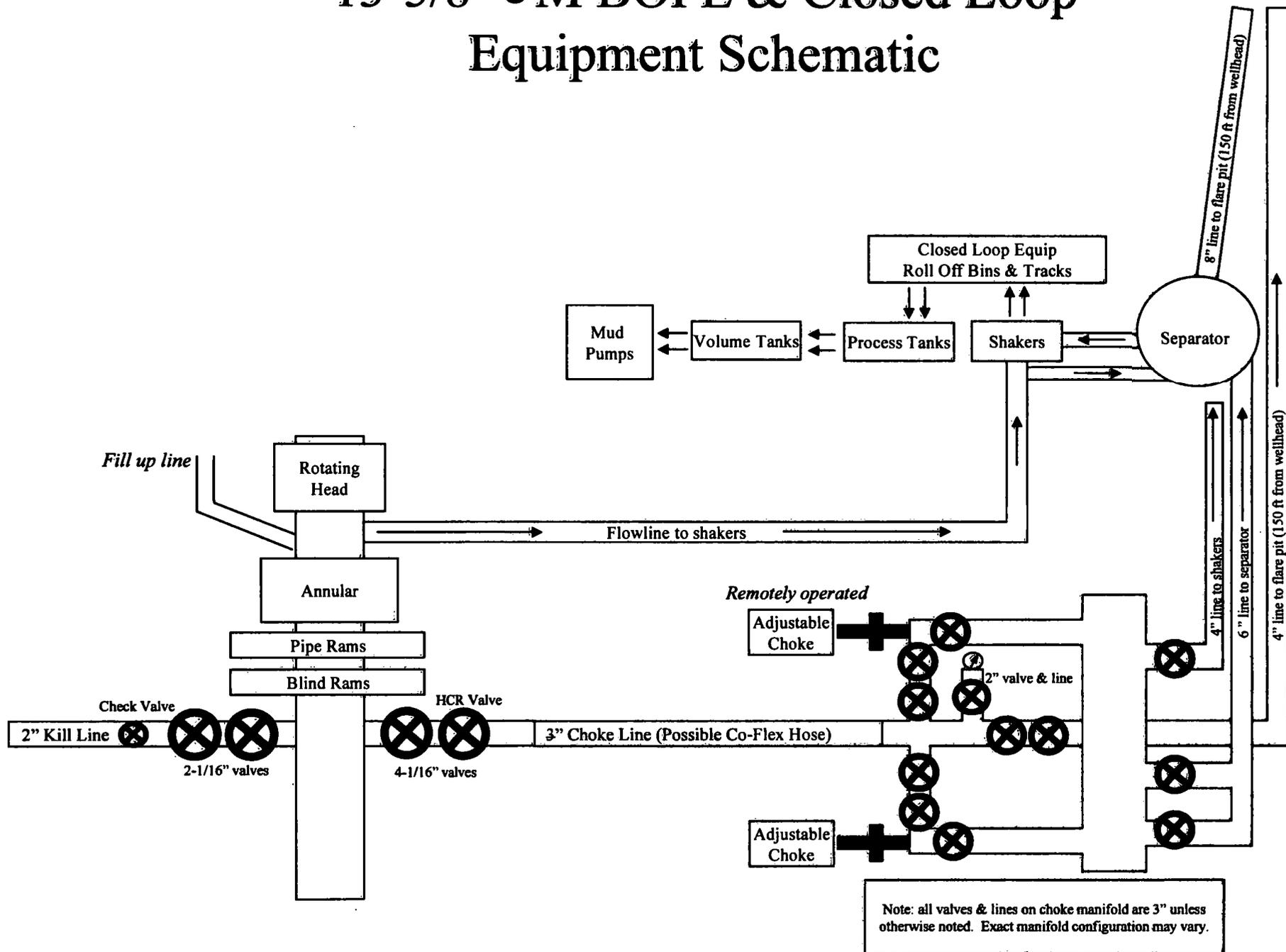


Name Jeanette	Date 7-19-06	Working Pressure	# J5132-E
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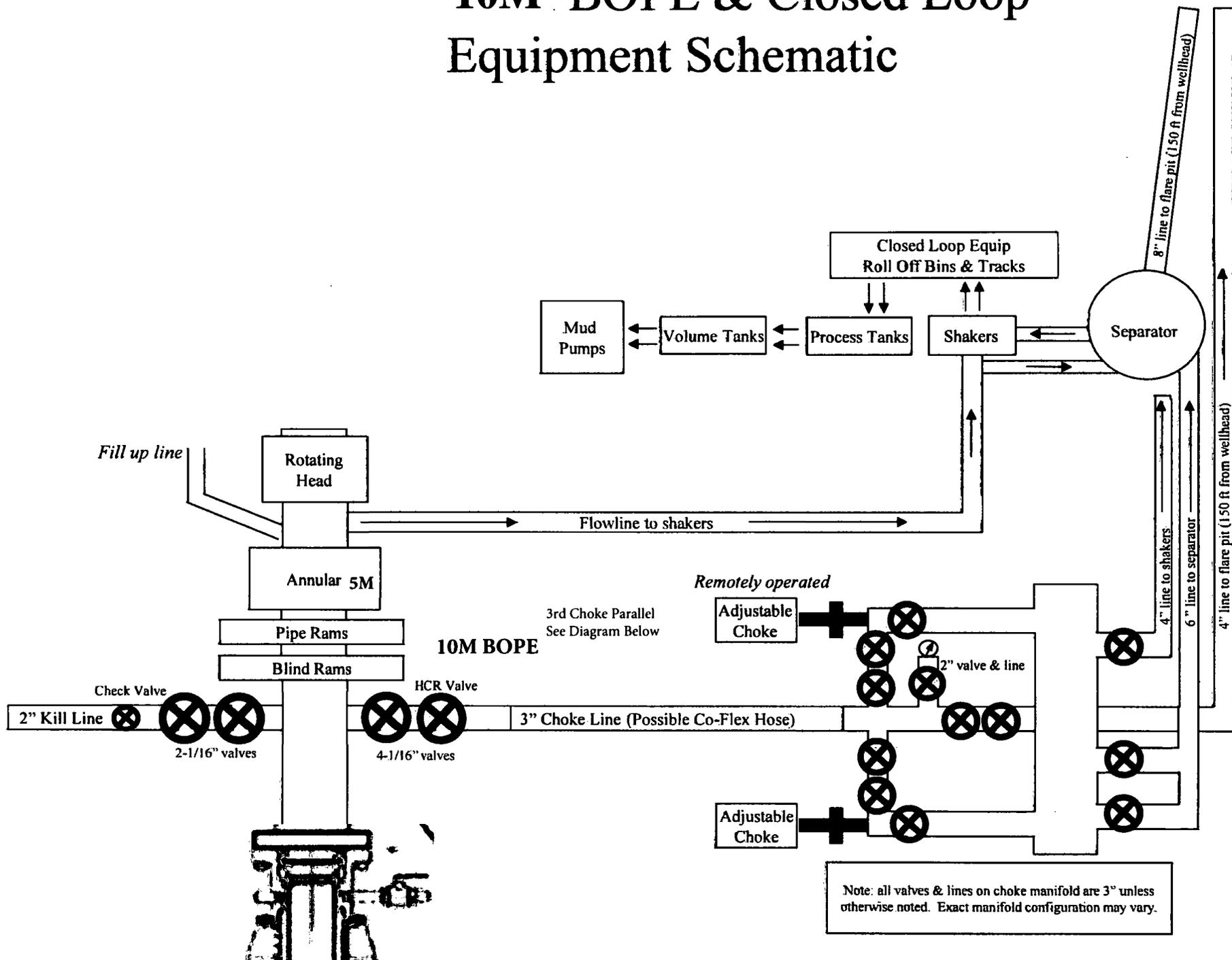
# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

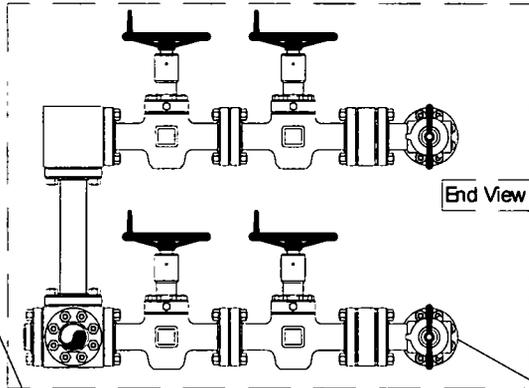
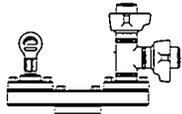


# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic

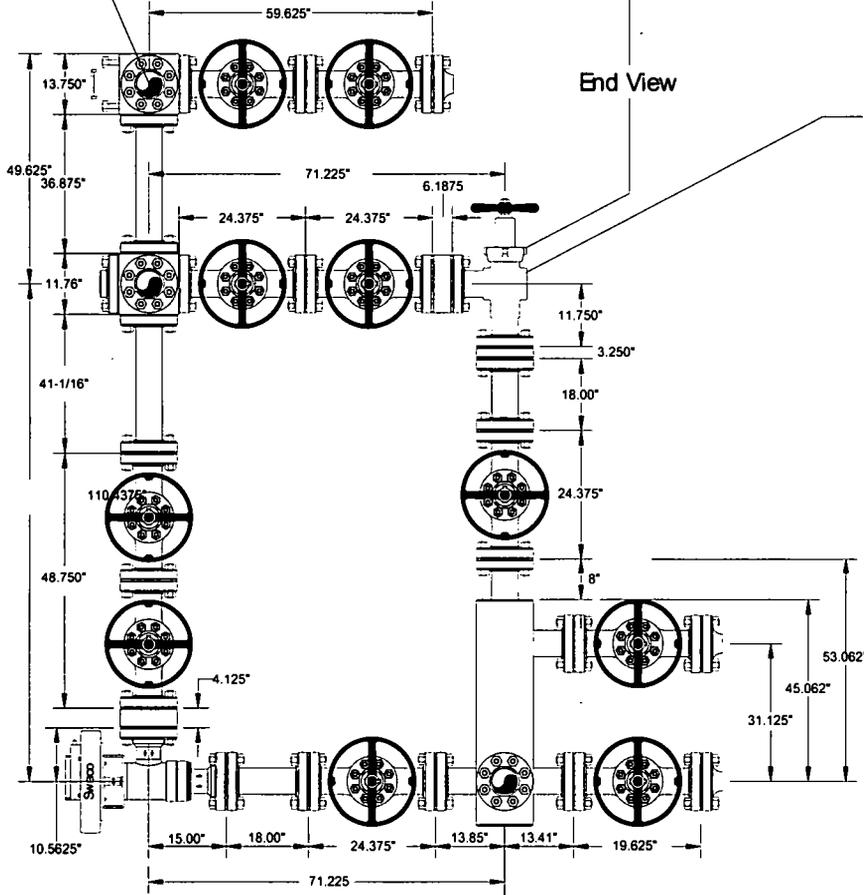


# 10M BOPE & Closed Loop Equipment Schematic



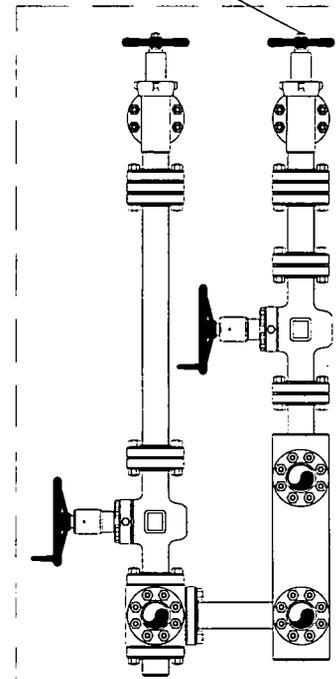


End View



End View

Side View



Side View

Helmerich & Payne  
Fig 282



Name: Jeanette	Date: 7-19-06	Working Pressure:	#	J5132-E
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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.

<b>Intermediate Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Intermediate Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
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.

<b>Intermediate Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Intermediate Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
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.

<b>Production Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Production Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
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.

<b>Surface Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Surface Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
Overpull	100kips
Runing in hole	3 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.

<b>Intermediate Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Intermediate Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
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.

<b>Intermediate Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

<b>Intermediate Casing Tension Design</b>	
<b>Load Case</b>	<b>Assumptions</b>
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.

<b>Production Casing Burst Design</b>		
<b>Load Case</b>	<b>External Pressure</b>	<b>Internal Pressure</b>
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

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

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



**Devon Energy Center  
333 West Sheridan Avenue  
Oklahoma City, Oklahoma 73102-5015**

# **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

**For**

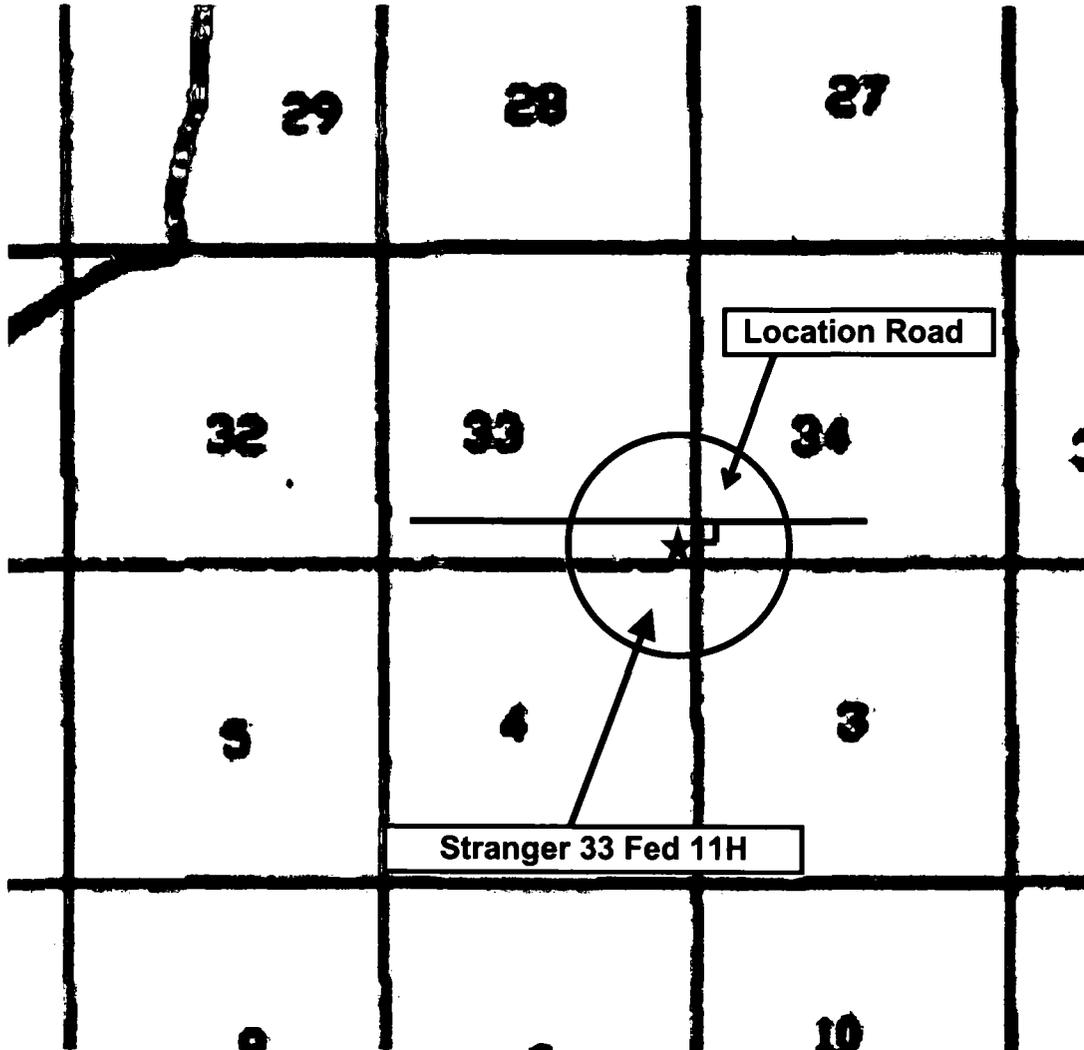
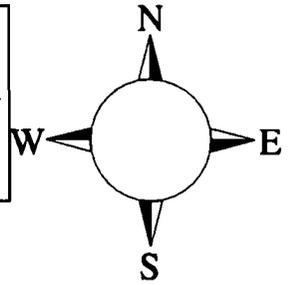
**Stranger 33 Fed 11H**

**Sec-33 T-25S R-34E  
205' FSL & 456' FEL  
LAT. = 32.0803039' N (NAD83)  
LONG = 103.4678066' W**

**Lea County NM**

# Stranger 33 Fed 11H

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



**Assumed 100 ppm ROE = 3000' (Radius of Exposure)  
100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.**

## Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

**Assumed 100 ppm ROE = 3000'**

**100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.**

### **Emergency Procedures**

**In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must**

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H<sub>2</sub>S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

<b>Common Name</b>	<b>Chemical Formula</b>	<b>Specific Gravity</b>	<b>Threshold Limit</b>	<b>Hazardous Limit</b>	<b>Lethal Concentration</b>
<b>Hydrogen Sulfide</b>	<b>H<sub>2</sub>S</b>	<b>1.189 Air = 1</b>	<b>10 ppm</b>	<b>100 ppm/hr</b>	<b>600 ppm</b>
<b>Sulfur Dioxide</b>	<b>SO<sub>2</sub></b>	<b>2.21 Air = 1</b>	<b>2 ppm</b>	<b>N/A</b>	<b>1000 ppm</b>

### **Contacting Authorities**

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

## **Hydrogen Sulfide Drilling Operation Plan**

### **I. HYDROGEN SULFIDE (H<sub>2</sub>S) TRAINING**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

### **II. HYDROGEN SULFIDE TRAINING**

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

## 1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

## 2. Protective equipment for essential personnel:

30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

## 3. H<sub>2</sub>S detection and monitoring equipment:

Portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights which activate when H<sub>2</sub>S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

### Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

#### **4. Mud program:**

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

#### **5. Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H<sub>2</sub>S trim.
- B. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

#### **6. Communication:**

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

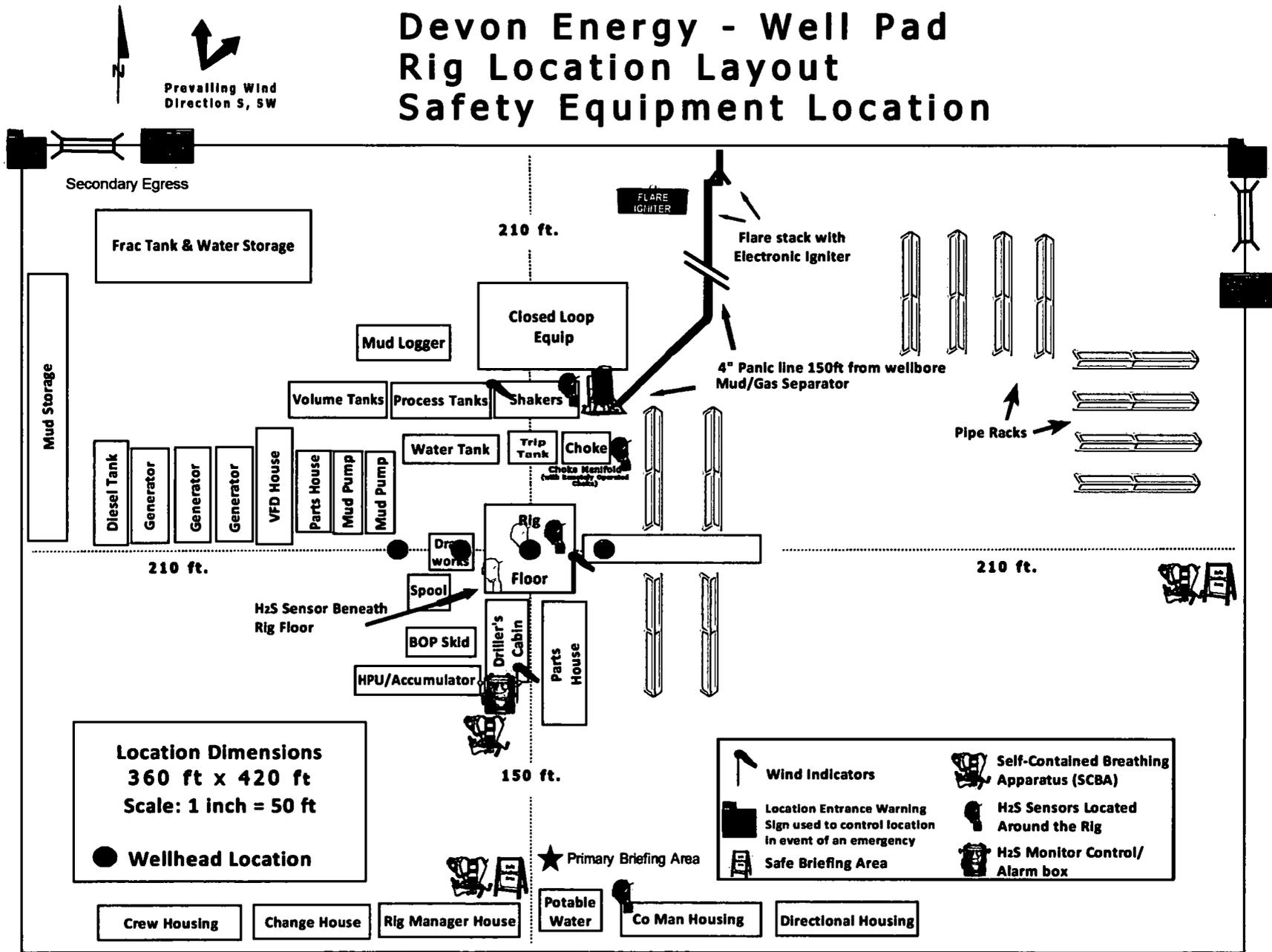
#### **7. Well testing:**

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

<b>Devon Energy Corp. Company Call List</b>		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
<b>Agency Call List</b>		
<b>Lea County (575)</b>	<b>Hobbs</b>	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	<b>Ambulance</b>	<b>911</b>
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
	<b>Eddy County (575)</b>	<b>Carlsbad</b>
State Police		885-3137
City Police		885-2111
Sheriff's Office		887-7551
<b>Ambulance</b>		<b>911</b>
Fire Department		885-3125
LEPC (Local Emergency Planning Committee)		887-3798
US Bureau of Land Management		887-6544
NM Emergency Response Commission (Santa Fe)		(505) 476-9600
24 HR		(505) 827-9126
National Emergency Response Center		(800) 424-8802
National Pollution Control Center: Direct		(703) 872-6000
For Oil Spills		(800) 280-7118
<b>Emergency Services</b>		
Wild Well Control		(281) 784-4700
Cudd Pressure Control		(915) 699-0139 (915) 563-3356
Halliburton		(575) 746-2757
B. J. Services		(575) 746-3569
<b>Give GPS position:</b>	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - <a href="http://www.nhc.noaa.gov">www.nhc.noaa.gov</a>	

Prepared in conjunction with  
 Dave Small **SHARP**  
communications and consulting

# Devon Energy - Well Pad Rig Location Layout Safety Equipment Location





# **WCDSC Permian NM**

**Lea County (NAD83 New Mexico East)**

**Sec 33-T25S-R34E**

**Stranger 33 Fed 11H**

**Wellbore #1**

**Plan: Permit Plan 1**

## **Standard Planning Report - Geographic**

**02 November, 2018**

Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Stranger 33 Fed 11H
<b>Company:</b>	WCDSC Permian NM	<b>TVD Reference:</b>	RKB @ 3355.20ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3355.20ft
<b>Site:</b>	Sec 33-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Stranger 33 Fed 11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

<b>Project</b>	Lea County (NAD83 New Mexico East)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Sec 33-T25S-R34E				
<b>Site Position:</b>		<b>Northing:</b>	399,056.87 usft	<b>Latitude:</b>	32.094236
<b>From:</b>	Map	<b>Easting:</b>	804,533.73 usft	<b>Longitude:</b>	-103.483424
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.45 °

<b>Well</b>	Stranger 33 Fed 11H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	394,027.14 usft	<b>Latitude:</b>	32.080304
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	809,410.83 usft	<b>Longitude:</b>	-103.467807
<b>Position Uncertainty</b>		0.50 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	3,330.20 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/3/2018	6.75	59.93	47,731.14496851

<b>Design</b>	Permit Plan 1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	0.92	

<b>Plan Survey Tool Program</b>	<b>Date</b>	11/2/2018			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	17,752.93 Permit Plan 1 (Wellbore #1)	MWD+HDGM OWSG MWD + HDGM		

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,826.28	1.26	140.89	2,826.27	-1.08	0.88	1.00	1.00	0.00	140.89	
11,785.01	1.26	140.89	11,782.82	-154.28	125.41	0.00	0.00	0.00	0.00	
11,869.19	0.00	0.00	11,867.00	-155.00	126.00	1.50	-1.50	0.00	180.00	
12,219.23	0.00	0.00	12,217.04	-155.00	126.00	0.00	0.00	0.00	0.00	
13,119.23	90.00	359.50	12,790.00	417.94	121.04	10.00	10.00	0.00	359.50	PBHL - Stranger 33 F
17,752.93	90.00	359.50	12,790.00	5,051.46	80.96	0.00	0.00	0.00	0.00	PBHL - Stranger 33 F

Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Stranger 33 Fed 11H
<b>Company:</b>	WCDCS Permian NM	<b>TVD Reference:</b>	RKB @ 3355.20ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3355.20ft
<b>Site:</b>	Sec 33-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Stranger 33 Fed 11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
100.00	0.00	0.00	100.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
200.00	0.00	0.00	200.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
300.00	0.00	0.00	300.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
400.00	0.00	0.00	400.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
500.00	0.00	0.00	500.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
600.00	0.00	0.00	600.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
700.00	0.00	0.00	700.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
800.00	0.00	0.00	800.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
900.00	0.00	0.00	900.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,000.00	0.00	0.00	1,000.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,100.00	0.00	0.00	1,100.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,200.00	0.00	0.00	1,200.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,300.00	0.00	0.00	1,300.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,400.00	0.00	0.00	1,400.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,500.00	0.00	0.00	1,500.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,600.00	0.00	0.00	1,600.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,700.00	0.00	0.00	1,700.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,800.00	0.00	0.00	1,800.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
1,900.00	0.00	0.00	1,900.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,000.00	0.00	0.00	2,000.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,100.00	0.00	0.00	2,100.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,200.00	0.00	0.00	2,200.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,300.00	0.00	0.00	2,300.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,400.00	0.00	0.00	2,400.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,500.00	0.00	0.00	2,500.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,600.00	0.00	0.00	2,600.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,700.00	0.00	0.00	2,700.00	0.00	0.00	394,027.14	809,410.83	32.080304	-103.467807
2,800.00	1.00	140.89	2,799.99	-0.68	0.55	394,026.47	809,411.38	32.080302	-103.467805
2,826.28	1.26	140.89	2,826.27	-1.08	0.88	394,026.07	809,411.70	32.080301	-103.467804
2,900.00	1.26	140.89	2,899.97	-2.34	1.90	394,024.80	809,412.73	32.080298	-103.467801
3,000.00	1.26	140.89	2,999.95	-4.05	3.29	394,023.09	809,414.12	32.080293	-103.467796
3,100.00	1.26	140.89	3,099.92	-5.76	4.68	394,021.38	809,415.51	32.080288	-103.467792
3,200.00	1.26	140.89	3,199.90	-7.47	6.07	394,019.67	809,416.90	32.080283	-103.467787
3,300.00	1.26	140.89	3,299.87	-9.18	7.46	394,017.96	809,418.29	32.080279	-103.467783
3,400.00	1.26	140.89	3,399.85	-10.89	8.85	394,016.25	809,419.68	32.080274	-103.467779
3,500.00	1.26	140.89	3,499.83	-12.60	10.24	394,014.54	809,421.07	32.080269	-103.467774
3,600.00	1.26	140.89	3,599.80	-14.31	11.63	394,012.83	809,422.46	32.080264	-103.467770
3,700.00	1.26	140.89	3,699.78	-16.02	13.02	394,011.12	809,423.85	32.080260	-103.467765
3,800.00	1.26	140.89	3,799.75	-17.73	14.41	394,009.41	809,425.24	32.080255	-103.467761
3,900.00	1.26	140.89	3,899.73	-19.44	15.80	394,007.70	809,426.63	32.080250	-103.467756
4,000.00	1.26	140.89	3,999.70	-21.15	17.19	394,005.99	809,428.02	32.080245	-103.467752
4,100.00	1.26	140.89	4,099.68	-22.86	18.58	394,004.28	809,429.41	32.080241	-103.467747
4,200.00	1.26	140.89	4,199.66	-24.57	19.97	394,002.57	809,430.80	32.080236	-103.467743
4,300.00	1.26	140.89	4,299.63	-26.28	21.36	394,000.86	809,432.19	32.080231	-103.467739
4,400.00	1.26	140.89	4,399.61	-27.99	22.75	393,999.15	809,433.58	32.080227	-103.467734
4,500.00	1.26	140.89	4,499.58	-29.70	24.14	393,997.44	809,434.97	32.080222	-103.467730
4,600.00	1.26	140.89	4,599.56	-31.41	25.53	393,995.73	809,436.36	32.080217	-103.467725
4,700.00	1.26	140.89	4,699.53	-33.12	26.92	393,994.02	809,437.75	32.080212	-103.467721
4,800.00	1.26	140.89	4,799.51	-34.83	28.31	393,992.31	809,439.14	32.080208	-103.467716
4,900.00	1.26	140.89	4,899.49	-36.54	29.70	393,990.60	809,440.53	32.080203	-103.467712
5,000.00	1.26	140.89	4,999.46	-38.25	31.10	393,988.89	809,441.92	32.080198	-103.467707
5,100.00	1.26	140.89	5,099.44	-39.96	32.49	393,987.18	809,443.31	32.080193	-103.467703
5,200.00	1.26	140.89	5,199.41	-41.67	33.88	393,985.47	809,444.70	32.080189	-103.467699
5,300.00	1.26	140.89	5,299.39	-43.38	35.27	393,983.76	809,446.09	32.080184	-103.467694

Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Stranger 33 Fed 11H
<b>Company:</b>	WCDCS Permian NM	<b>TVD Reference:</b>	RKB @ 3355.20ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3355.20ft
<b>Site:</b>	Sec 33-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Stranger 33 Fed 11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	1.26	140.89	5,399.36	-45.09	36.66	393,982.05	809,447.48	32.080179	-103.467690
5,500.00	1.26	140.89	5,499.34	-46.80	38.05	393,980.34	809,448.87	32.080174	-103.467685
5,600.00	1.26	140.89	5,599.32	-48.51	39.44	393,978.63	809,450.26	32.080170	-103.467681
5,700.00	1.26	140.89	5,699.29	-50.22	40.83	393,976.92	809,451.65	32.080165	-103.467676
5,800.00	1.26	140.89	5,799.27	-51.93	42.22	393,975.21	809,453.04	32.080160	-103.467672
5,900.00	1.26	140.89	5,899.24	-53.64	43.61	393,973.50	809,454.43	32.080156	-103.467667
6,000.00	1.26	140.89	5,999.22	-55.35	45.00	393,971.79	809,455.82	32.080151	-103.467663
6,100.00	1.26	140.89	6,099.19	-57.06	46.39	393,970.08	809,457.21	32.080146	-103.467659
6,200.00	1.26	140.89	6,199.17	-58.77	47.78	393,968.37	809,458.60	32.080141	-103.467654
6,300.00	1.26	140.89	6,299.15	-60.48	49.17	393,966.66	809,459.99	32.080137	-103.467650
6,400.00	1.26	140.89	6,399.12	-62.19	50.56	393,964.95	809,461.38	32.080132	-103.467645
6,500.00	1.26	140.89	6,499.10	-63.90	51.95	393,963.24	809,462.77	32.080127	-103.467641
6,600.00	1.26	140.89	6,599.07	-65.61	53.34	393,961.53	809,464.16	32.080122	-103.467636
6,700.00	1.26	140.89	6,699.05	-67.32	54.73	393,959.82	809,465.55	32.080118	-103.467632
6,800.00	1.26	140.89	6,799.02	-69.03	56.12	393,958.11	809,466.94	32.080113	-103.467627
6,900.00	1.26	140.89	6,899.00	-70.74	57.51	393,956.40	809,468.33	32.080108	-103.467623
7,000.00	1.26	140.89	6,998.98	-72.45	58.90	393,954.69	809,469.72	32.080104	-103.467619
7,100.00	1.26	140.89	7,098.95	-74.16	60.29	393,952.98	809,471.11	32.080099	-103.467614
7,200.00	1.26	140.89	7,198.93	-75.87	61.68	393,951.27	809,472.50	32.080094	-103.467610
7,300.00	1.26	140.89	7,298.90	-77.58	63.07	393,949.56	809,473.89	32.080089	-103.467605
7,400.00	1.26	140.89	7,398.88	-79.29	64.46	393,947.85	809,475.28	32.080085	-103.467601
7,500.00	1.26	140.89	7,498.85	-81.00	65.85	393,946.14	809,476.67	32.080080	-103.467596
7,600.00	1.26	140.89	7,598.83	-82.71	67.24	393,944.43	809,478.06	32.080075	-103.467592
7,700.00	1.26	140.89	7,698.81	-84.42	68.63	393,942.72	809,479.45	32.080070	-103.467587
7,800.00	1.26	140.89	7,798.78	-86.13	70.02	393,941.01	809,480.84	32.080066	-103.467583
7,900.00	1.26	140.89	7,898.76	-87.84	71.41	393,939.30	809,482.23	32.080061	-103.467579
8,000.00	1.26	140.89	7,998.73	-89.55	72.80	393,937.59	809,483.62	32.080056	-103.467574
8,100.00	1.26	140.89	8,098.71	-91.26	74.19	393,935.88	809,485.02	32.080051	-103.467570
8,200.00	1.26	140.89	8,198.68	-92.97	75.58	393,934.17	809,486.41	32.080047	-103.467565
8,300.00	1.26	140.89	8,298.66	-94.68	76.97	393,932.46	809,487.80	32.080042	-103.467561
8,400.00	1.26	140.89	8,398.64	-96.39	78.36	393,930.75	809,489.19	32.080037	-103.467556
8,500.00	1.26	140.89	8,498.61	-98.10	79.75	393,929.04	809,490.58	32.080033	-103.467552
8,600.00	1.26	140.89	8,598.59	-99.81	81.14	393,927.33	809,491.97	32.080028	-103.467547
8,700.00	1.26	140.89	8,698.56	-101.52	82.53	393,925.62	809,493.36	32.080023	-103.467543
8,800.00	1.26	140.89	8,798.54	-103.23	83.92	393,923.91	809,494.75	32.080018	-103.467539
8,900.00	1.26	140.89	8,898.51	-104.94	85.31	393,922.20	809,496.14	32.080014	-103.467534
9,000.00	1.26	140.89	8,998.49	-106.65	86.70	393,920.49	809,497.53	32.080009	-103.467530
9,100.00	1.26	140.89	9,098.47	-108.36	88.09	393,918.78	809,498.92	32.080004	-103.467525
9,200.00	1.26	140.89	9,198.44	-110.07	89.48	393,917.07	809,500.31	32.079999	-103.467521
9,300.00	1.26	140.89	9,298.42	-111.78	90.87	393,915.36	809,501.70	32.079995	-103.467516
9,400.00	1.26	140.89	9,398.39	-113.49	92.26	393,913.65	809,503.09	32.079990	-103.467512
9,500.00	1.26	140.89	9,498.37	-115.20	93.65	393,911.94	809,504.48	32.079985	-103.467508
9,600.00	1.26	140.89	9,598.34	-116.92	95.04	393,910.23	809,505.87	32.079981	-103.467503
9,700.00	1.26	140.89	9,698.32	-118.63	96.43	393,908.52	809,507.26	32.079976	-103.467499
9,800.00	1.26	140.89	9,798.30	-120.34	97.82	393,906.81	809,508.65	32.079971	-103.467494
9,900.00	1.26	140.89	9,898.27	-122.05	99.21	393,905.10	809,510.04	32.079966	-103.467490
10,000.00	1.26	140.89	9,998.25	-123.76	100.60	393,903.39	809,511.43	32.079962	-103.467485
10,100.00	1.26	140.89	10,098.22	-125.47	101.99	393,901.68	809,512.82	32.079957	-103.467481
10,200.00	1.26	140.89	10,198.20	-127.18	103.38	393,899.97	809,514.21	32.079952	-103.467476
10,300.00	1.26	140.89	10,298.17	-128.89	104.77	393,898.26	809,515.60	32.079947	-103.467472
10,400.00	1.26	140.89	10,398.15	-130.60	106.16	393,896.55	809,516.99	32.079943	-103.467468
10,500.00	1.26	140.89	10,498.13	-132.31	107.55	393,894.84	809,518.38	32.079938	-103.467463
10,600.00	1.26	140.89	10,598.10	-134.02	108.94	393,893.13	809,519.77	32.079933	-103.467459
10,700.00	1.26	140.89	10,698.08	-135.73	110.33	393,891.42	809,521.16	32.079928	-103.467454
10,800.00	1.26	140.89	10,798.05	-137.44	111.72	393,889.71	809,522.55	32.079924	-103.467450

Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Stranger 33 Fed 11H
<b>Company:</b>	WCDSC Permian NM	<b>TVD Reference:</b>	RKB @ 3355.20ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3355.20ft
<b>Site:</b>	Sec 33-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Stranger 33 Fed 11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,900.00	1.26	140.89	10,898.03	-139.15	113.11	393,888.00	809,523.94	32.079919	-103.467445	
11,000.00	1.26	140.89	10,998.00	-140.86	114.50	393,886.29	809,525.33	32.079914	-103.467441	
11,100.00	1.26	140.89	11,097.98	-142.57	115.89	393,884.58	809,526.72	32.079910	-103.467436	
11,200.00	1.26	140.89	11,197.96	-144.28	117.28	393,882.87	809,528.11	32.079905	-103.467432	
11,300.00	1.26	140.89	11,297.93	-145.99	118.67	393,881.16	809,529.50	32.079900	-103.467428	
11,400.00	1.26	140.89	11,397.91	-147.70	120.06	393,879.45	809,530.89	32.079895	-103.467423	
11,500.00	1.26	140.89	11,497.88	-149.41	121.45	393,877.74	809,532.28	32.079891	-103.467419	
11,600.00	1.26	140.89	11,597.86	-151.12	122.84	393,876.03	809,533.67	32.079886	-103.467414	
11,700.00	1.26	140.89	11,697.83	-152.83	124.23	393,874.32	809,535.06	32.079881	-103.467410	
11,785.01	1.26	140.89	11,782.82	-154.28	125.41	393,872.86	809,536.24	32.079877	-103.467406	
11,800.00	1.04	140.89	11,797.81	-154.51	125.60	393,872.63	809,536.43	32.079877	-103.467405	
11,869.19	0.00	0.00	11,867.00	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
11,900.00	0.00	0.00	11,897.81	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
12,000.00	0.00	0.00	11,997.81	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
12,100.00	0.00	0.00	12,097.81	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
12,200.00	0.00	0.00	12,197.81	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
12,219.23	0.00	0.00	12,217.04	-155.00	126.00	393,872.15	809,536.83	32.079875	-103.467404	
<b>KOP @ 12219' MD, 50' FSL, 330' FEL</b>										
12,300.00	8.08	359.50	12,297.54	-149.32	125.95	393,877.83	809,536.78	32.079891	-103.467404	
12,400.00	18.08	359.50	12,394.82	-126.72	125.76	393,900.42	809,536.58	32.079953	-103.467404	
12,460.38	24.11	359.50	12,451.13	-105.00	125.57	393,922.15	809,536.39	32.080013	-103.467404	
<b>FTP @ 12460' MD, 100' FSL, 330' FEL</b>										
12,500.00	28.08	359.50	12,486.70	-87.58	125.42	393,939.57	809,536.24	32.080060	-103.467404	
12,600.00	38.08	359.50	12,570.39	-33.07	124.95	393,994.07	809,535.77	32.080210	-103.467404	
12,700.00	48.08	359.50	12,643.34	35.14	124.36	394,062.28	809,535.18	32.080398	-103.467404	
12,800.00	58.08	359.50	12,703.34	114.98	123.66	394,142.12	809,534.49	32.080617	-103.467405	
12,900.00	68.08	359.50	12,748.56	204.02	122.89	394,231.17	809,533.72	32.080862	-103.467405	
13,000.00	78.08	359.50	12,777.64	299.57	122.07	394,326.71	809,532.89	32.081125	-103.467405	
13,100.00	88.08	359.50	12,789.68	398.71	121.21	394,425.85	809,532.04	32.081397	-103.467405	
13,119.23	90.00	359.50	12,790.00	417.94	121.04	394,445.08	809,531.87	32.081450	-103.467405	
13,200.00	90.00	359.50	12,790.00	498.70	120.34	394,525.84	809,531.17	32.081672	-103.467405	
13,300.00	90.00	359.50	12,790.00	598.70	119.48	394,625.84	809,530.31	32.081947	-103.467406	
13,400.00	90.00	359.50	12,790.00	698.69	118.61	394,725.84	809,529.44	32.082222	-103.467406	
13,500.00	90.00	359.50	12,790.00	798.69	117.75	394,825.83	809,528.58	32.082497	-103.467406	
13,600.00	90.00	359.50	12,790.00	898.68	116.88	394,925.83	809,527.71	32.082772	-103.467406	
13,700.00	90.00	359.50	12,790.00	998.68	116.02	395,025.82	809,526.85	32.083046	-103.467406	
13,800.00	90.00	359.50	12,790.00	1,098.68	115.15	395,125.82	809,525.98	32.083321	-103.467407	
13,900.00	90.00	359.50	12,790.00	1,198.67	114.29	395,225.82	809,525.12	32.083596	-103.467407	
14,000.00	90.00	359.50	12,790.00	1,298.67	113.42	395,325.81	809,524.25	32.083871	-103.467407	
14,100.00	90.00	359.50	12,790.00	1,398.67	112.56	395,425.81	809,523.39	32.084146	-103.467407	
14,200.00	90.00	359.50	12,790.00	1,498.66	111.69	395,525.80	809,522.52	32.084421	-103.467407	
14,300.00	90.00	359.50	12,790.00	1,598.66	110.83	395,625.80	809,521.66	32.084696	-103.467408	
14,400.00	90.00	359.50	12,790.00	1,698.65	109.96	395,725.80	809,520.79	32.084971	-103.467408	
14,500.00	90.00	359.50	12,790.00	1,798.65	109.10	395,825.79	809,519.93	32.085245	-103.467408	
14,600.00	90.00	359.50	12,790.00	1,898.65	108.23	395,925.79	809,519.06	32.085520	-103.467408	
14,700.00	90.00	359.50	12,790.00	1,998.64	107.37	396,025.78	809,518.19	32.085795	-103.467408	
14,800.00	90.00	359.50	12,790.00	2,098.64	106.50	396,125.78	809,517.33	32.086070	-103.467409	
14,900.00	90.00	359.50	12,790.00	2,198.64	105.64	396,225.78	809,516.46	32.086345	-103.467409	
15,000.00	90.00	359.50	12,790.00	2,298.63	104.77	396,325.77	809,515.60	32.086620	-103.467409	
15,100.00	90.00	359.50	12,790.00	2,398.63	103.91	396,425.77	809,514.73	32.086895	-103.467409	
15,200.00	90.00	359.50	12,790.00	2,498.63	103.04	396,525.76	809,513.87	32.087170	-103.467409	
15,300.00	90.00	359.50	12,790.00	2,598.62	102.18	396,625.76	809,513.00	32.087444	-103.467410	
15,400.00	90.00	359.50	12,790.00	2,698.62	101.31	396,725.76	809,512.14	32.087719	-103.467410	
15,500.00	90.00	359.50	12,790.00	2,798.61	100.45	396,825.75	809,511.27	32.087994	-103.467410	

Planning Report - Geographic

<b>Database:</b>	EDM r5000.141_Prod US	<b>Local Co-ordinate Reference:</b>	Well Stranger 33 Fed 11H
<b>Company:</b>	WCDSC Permian NM	<b>TVD Reference:</b>	RKB @ 3355.20ft
<b>Project:</b>	Lea County (NAD83 New Mexico East)	<b>MD Reference:</b>	RKB @ 3355.20ft
<b>Site:</b>	Sec 33-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Stranger 33 Fed 11H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permit Plan 1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,600.00	90.00	359.50	12,790.00	2,898.61	99.58	396,925.75	809,510.41	32.088269	-103.467410	
15,700.00	90.00	359.50	12,790.00	2,998.61	98.72	397,025.75	809,509.54	32.088544	-103.467410	
15,800.00	90.00	359.50	12,790.00	3,098.60	97.85	397,125.74	809,508.68	32.088819	-103.467411	
15,900.00	90.00	359.50	12,790.00	3,198.60	96.99	397,225.74	809,507.81	32.089094	-103.467411	
16,000.00	90.00	359.50	12,790.00	3,298.60	96.12	397,325.73	809,506.95	32.089369	-103.467411	
16,100.00	90.00	359.50	12,790.00	3,398.59	95.26	397,425.73	809,506.08	32.089643	-103.467411	
16,200.00	90.00	359.50	12,790.00	3,498.59	94.39	397,525.73	809,505.22	32.089918	-103.467411	
16,300.00	90.00	359.50	12,790.00	3,598.58	93.53	397,625.72	809,504.35	32.090193	-103.467412	
16,400.00	90.00	359.50	12,790.00	3,698.58	92.66	397,725.72	809,503.49	32.090468	-103.467412	
16,500.00	90.00	359.50	12,790.00	3,798.58	91.80	397,825.71	809,502.62	32.090743	-103.467412	
16,600.00	90.00	359.50	12,790.00	3,898.57	90.93	397,925.71	809,501.76	32.091018	-103.467412	
16,700.00	90.00	359.50	12,790.00	3,998.57	90.07	398,025.71	809,500.89	32.091293	-103.467412	
16,800.00	90.00	359.50	12,790.00	4,098.57	89.20	398,125.70	809,500.03	32.091568	-103.467413	
16,900.00	90.00	359.50	12,790.00	4,198.56	88.34	398,225.70	809,499.16	32.091842	-103.467413	
17,000.00	90.00	359.50	12,790.00	4,298.56	87.47	398,325.69	809,498.30	32.092117	-103.467413	
17,100.00	90.00	359.50	12,790.00	4,398.55	86.61	398,425.69	809,497.43	32.092392	-103.467413	
17,200.00	90.00	359.50	12,790.00	4,498.55	85.74	398,525.69	809,496.57	32.092667	-103.467413	
17,300.00	90.00	359.50	12,790.00	4,598.55	84.88	398,625.68	809,495.70	32.092942	-103.467414	
17,400.00	90.00	359.50	12,790.00	4,698.54	84.01	398,725.68	809,494.84	32.093217	-103.467414	
17,500.00	90.00	359.50	12,790.00	4,798.54	83.15	398,825.67	809,493.97	32.093492	-103.467414	
17,600.00	90.00	359.50	12,790.00	4,898.54	82.28	398,925.67	809,493.11	32.093767	-103.467414	
17,672.92	90.00	359.50	12,790.00	4,971.45	81.65	398,998.59	809,492.48	32.093967	-103.467414	
LTP @ 17673' MD, 100' FNL, 330' FEL										
17,700.00	90.00	359.50	12,790.00	4,998.53	81.42	399,025.67	809,492.24	32.094041	-103.467414	
17,752.92	90.00	359.50	12,790.00	5,051.45	80.96	399,078.58	809,491.79	32.094187	-103.467415	
PBHL; 20' FNL, 330' FEL										
17,752.93	90.00	359.50	12,790.00	5,051.46	80.96	399,078.60	809,491.79	32.094187	-103.467415	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL - Stranger 33 Fed	0.00	0.00	0.00	5,051.46	80.96	399,078.60	809,491.79	32.094187	-103.467415	
- plan misses target center by 5052.11ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
12,219.23	12,217.04	-155.00	126.00	KOP @ 12219' MD, 50' FSL, 330' FEL	
12,460.38	12,451.13	-105.00	125.57	FTP @ 12460' MD, 100' FSL, 330' FEL	
17,672.92	12,790.00	4,971.45	81.65	LTP @ 17673' MD, 100' FNL, 330' FEL	
17,752.92	12,790.00	5,051.45	80.96	PBHL; 20' FNL, 330' FEL	

# WCDSC Permian NM

WELL DETAILS: Stranger 33 Fed 11H

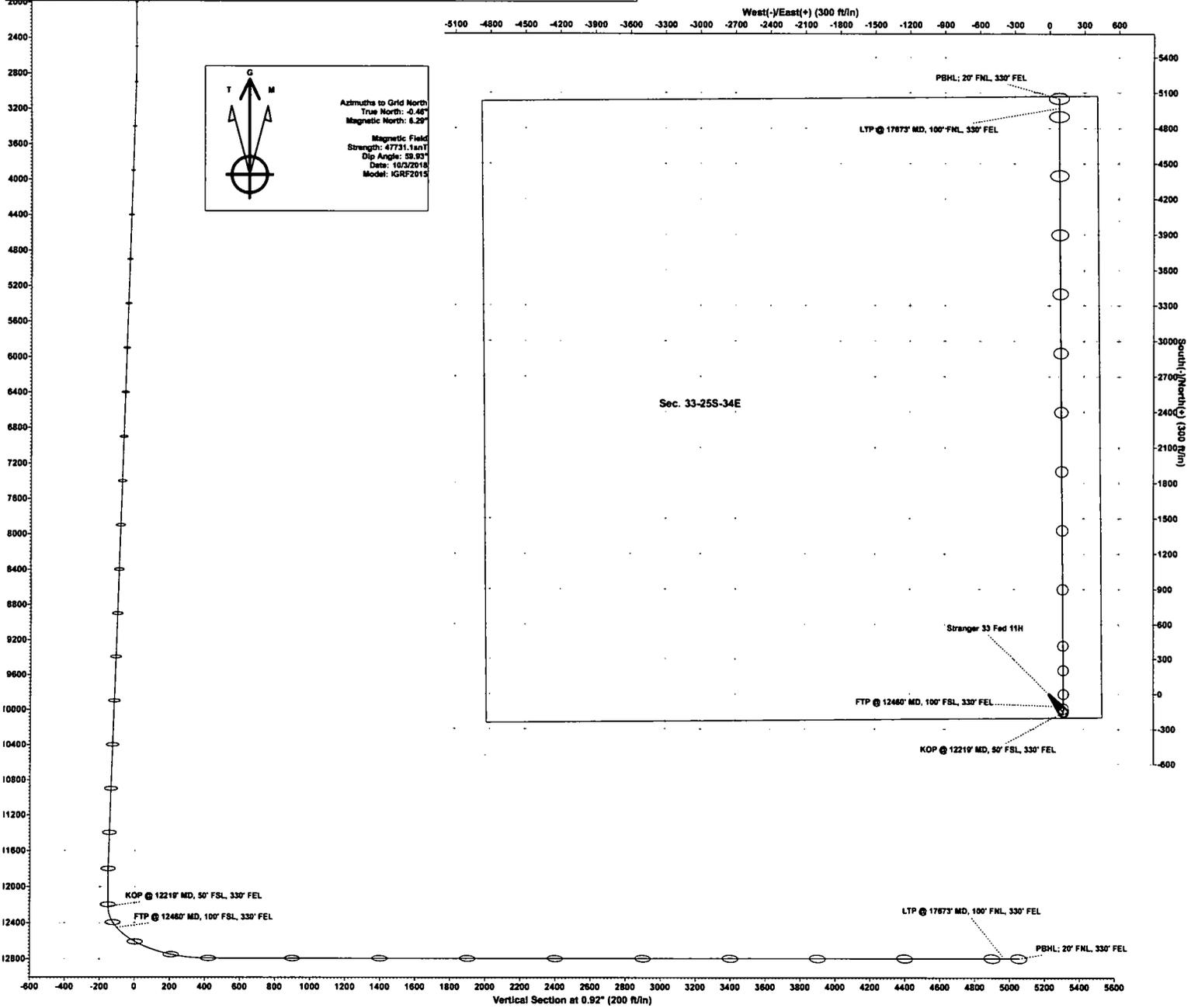
RKB @ 3355.20ft  
3330.20

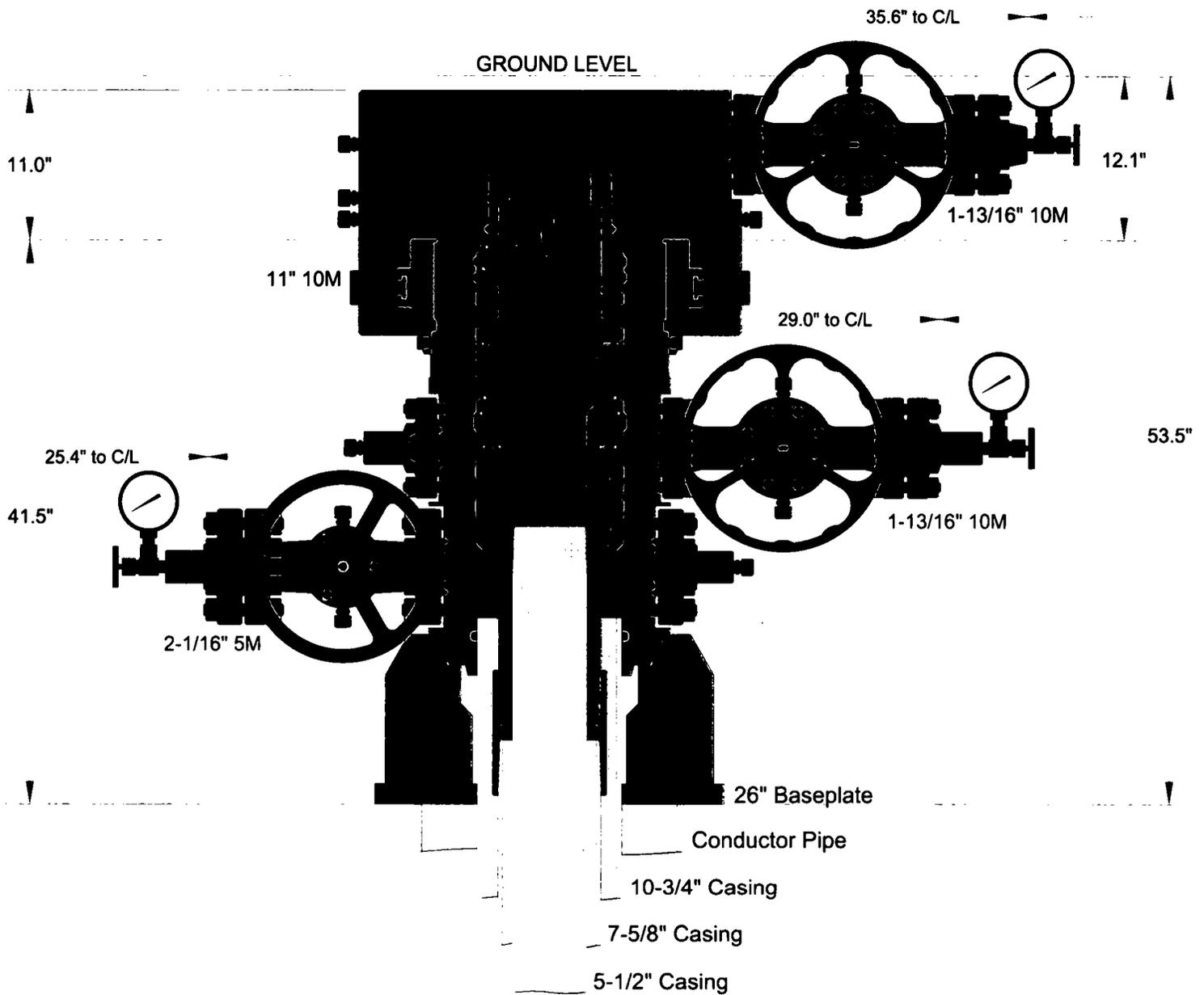
Northing 394027.15    Easting 809410.83    Latitude 32.080304    Longitude -103.467807



## SECTION DETAILS Permit Plan 1

MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	
2826.28	1.26	140.89	2826.27	-1.08	0.88	1.00	-1.07	
11785.01	1.26	140.89	11782.82	-154.28	125.41	0.00	-152.25	
5 11869.19	0.00	0.00	11867.00	-155.00	126.00	1.50	-152.96	
5 12219.23	0.00	0.00	12217.04	-155.00	126.00	0.00	-152.96	KOP @ 12219' MD, 50' FSL, 330' FEL
7 13119.23	90.00	359.50	12790.00	417.94	121.04	10.00	419.82	
3 17752.93	90.00	359.50	12790.00	5051.46	80.96	0.00	5052.11	PBHL: 20' FNL, 330' FEL





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# CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION

16" x 11-7/8" x 7-5/8" MBU-T Wellhead Assembly  
 With 7-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers  
 And 11" 10M MBU-T-HPS-F TA Cap

DRAWN	DLE	29NOV17
APPRV		
DRAWING NO.		OKE0001764

**Devon Energy**  
**APD VARIANCE DATA**

**OPERATOR NAME:** Devon Energy

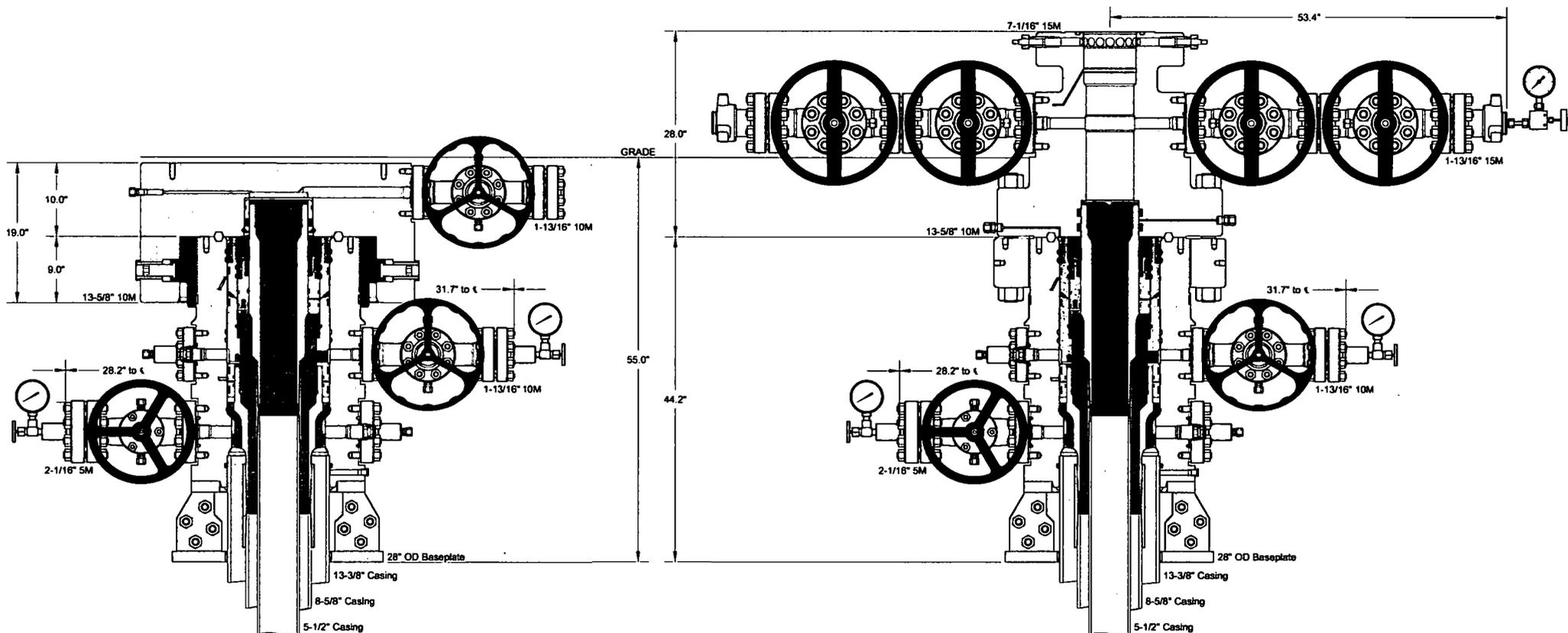
**1. SUMMARY OF Variance:**

Devon Energy respectfully requests approval for the following additions to the drilling plan:

1. Potential utilization of a spudder rig to pre-set surface casing.

**2. Description of Operations**

1. A spudder rig contractor may move in their rig to drill the surface hole section and pre-set surface casing on this well.
  - a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
  - b. Rig will utilize fresh water based mud to drill surface hole to TD.
2. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
3. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
  - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
5. Drilling operation will be performed with the big rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
  - a. The BLM will be contacted / notified 24 hours before the big rig moves back on to the pad with the pre-set surface casing.
6. Devon Energy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
7. Once the rig is removed, Devon Energy will secure the wellhead area by placing a guard rail around the cellar area.



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## CACTUS WELLHEAD LLC

13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System  
 With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers  
 And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head

DEVON ENERGY CORPORATION

DRAWN

DLE

10MAY18

APPRV

DRAWING NO.

ODE0002309

**1. Geologic Formations**

TVD of target	12,790'	Pilot hole depth	N/A
MD at TD:	17,672'	Deepest expected fresh water:	810'

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	810		
Top of Salt	1200		
3BSSS	12020		
WFMP	12480		

\*H2S, water flows, loss of circulation, abnormal pressures, etc.

**2. Casing Program**

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
14.75"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
9.875"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
8.75"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
6.75"	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the centralizer requirement for the 7-5/8" flush casing in the 8-3/4" hole and the 5-1/2" SF/Flush casing in the 6-3/4" hole.

**Casing Program (Alternate Design)**

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	820'	13.375"	48	H-40	STC	1.125	1.25	1.6
9.875"	0	12,219'	8.625"	32	P110EC	TLW	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the centralizer requirement for the 8-5/8" casing in the 9-7/8" hole and the 5-1/2" casing in the 7-7/8" hole.

8-5/8" Intermediate casing will be kept fluid filled to 100%.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

**3. Cementing Program (Primary Design)**

Casing	# Sks	Wt. lb/ gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
Int	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS
Intermediate Two-Stage (Bradenhead)	1000	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	609	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Production	See AFMSS	See AFMSS	See AFMSS	See AFMSS	See AFMSS

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

**Cementing Program (Alternate Design)**

Casing	# Sks	Wt. lb/ gal	H <sub>2</sub> O gal/ sk	Yld ft <sup>3</sup> / sack	Slurry Description
Surface	569	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	436	9	13.5	3.27	Lead: Tuned Light® Cement
	482	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Intermediate Two-Stage (Bradenhead)	1000	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	482	13.2	5.31	1.6	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
Production	813	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

**4. Pressure Control Equipment**

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	------------------------------------------------------------------------------------------------------

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	<input checked="" type="checkbox"/>	Tested to:
Intermediate	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
Production	13-5/8"	10M	Annular (5M)	X	100% of rated working pressure
			Blind Ram	X	10M
			Pipe Ram	X	
			Double Ram	X	
			Other*		
			Annular		
			Blind Ram		

\*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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 10,000 psi WP.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	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.
Y	Are anchors required by manufacturer?
Y	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.
Y	Devon requests a variance to run a 5M annular on a 10M BOP system. See separately attached variance request and support documents in AFMSS.

## 5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	820'	FW Gel	See AFMSS	See AFMSS	See AFMSS
820'	12,930'	OBM/Cut Brine	See AFMSS	See AFMSS	See AFMSS
12,930'	TD	Oil Based Mud	See AFMSS	See AFMSS	See AFMSS

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
---------------------------------------------------------	-----------------------------

## 6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

## 7. Drilling Conditions

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

## 8. Other facets of operation

Is this a walking operation? Potentially

1. In the event the spudder rig is unable to drill the surface holes the drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections with either OBM or cut brine and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.

3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

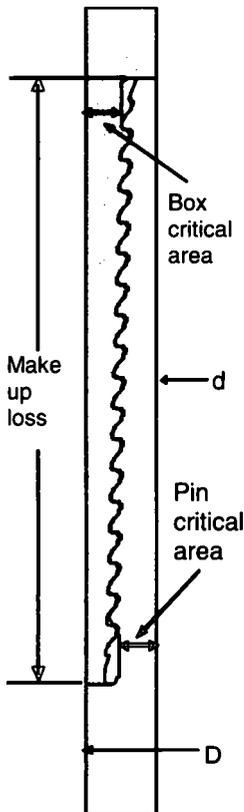
Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
  - a. Rig will utilize fresh water based mud to drill 14 3/4" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10-3/4" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
  - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

- Directional Plan  
 Other, describe

**FLUSHMAX-III**



**Geometry**

Imperial

S.I.

**Pipe Body**

Grade	P110		P110	
Pipe OD ( D )	7 5/8	in	193.68	mm
Weight	29.70	lb/ft	44.20	kg/m
Actual weight	29.04		43.21	kg/m
Wall Thickness ( t )	0.375	in	9.53	mm
Pipe ID ( d )	6.875	in	174.63	mm
Pipe body cross section	8.537	in <sup>2</sup>	5,508	mm <sup>2</sup>
Drift Dia.	6.750	in	171.45	mm

**Connection**

Box OD ( W )	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Make up Loss	3.040	in	77.22	mm
Box Critical Area	4.424	in <sup>2</sup>	2854	mm <sup>2</sup>
Joint load efficiency	60	%	60	%
Thread Taper	1 / 16 ( 3/4" per ft )			
Number of Threads	5 TPI			

**Performance Properties for Pipe Body**

M.I.Y.P.	9,470	psi	65.31	MPa
----------	-------	-----	-------	-----

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body  
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

**Performance Properties for Connection**

Min. Compression Yield	563 kips ( 60% of S.M.Y.S. )
External Pressure	100% of Collapse Strength

**Recommended Torque**

Opti.	17,200	ft-lb	23,300	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

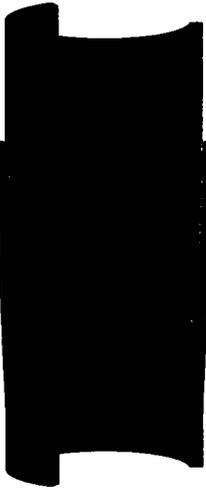
Note : Operational Max. torque can be applied for high torque application

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to [http://www.mtlo.co.jp/mo-con/images/top/WebsiteTerms\\_Active\\_20333287\\_1.pdf](http://www.mtlo.co.jp/mo-con/images/top/WebsiteTerms_Active_20333287_1.pdf) the contents of which are incorporated by reference into this Connection Data Sheet.



# TEC-LOCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)  
BORUSAN MANNESMANNP110 HSCY

## Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

## Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in <sup>2</sup>
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

## Operational Data

Minimum Makeup Torque:	29,900	ft*lbf
Optimum Makeup Torque:	37,375	ft*lbf
Maximum Makeup Torque:	80,900	ft*lbf
Minimum Yield:	89,900	ft*lbf
Makeup Loss:	5.97	in

## Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.





**U. S. Steel Tubular Products**  
**10.75 40.5/0.35 J55**

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<b>MECHANICAL PROPERTIES</b>	<b>Pipe</b>	<b>BTC</b>	<b>LTC</b>	<b>STC</b>	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi

<b>DIMENSIONS</b>	<b>Pipe</b>	<b>BTC</b>	<b>LTC</b>	<b>STC</b>	
Outside Diameter	10.750	11.750	--	11.750	in.
Wall Thickness	0.350	--	--	--	in.
Inside Diameter	10.050	10.050	--	10.050	in.
Standard Drift	9.894	9.894	--	9.894	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	40.50	--	--	--	lbs/ft
Plain End Weight	38.91	--	--	--	lbs/ft

<b>PERFORMANCE</b>	<b>Pipe</b>	<b>BTC</b>	<b>LTC</b>	<b>STC</b>	
Minimum Collapse Pressure	1,580	1,580	--	1,580	psi
Minimum Internal Yield Pressure	3,130	3,130	--	3,130	psi
Minimum Pipe Body Yield Strength	629,000	--	--	--	lbs
Joint Strength	--	700	--	420	lbs
Reference Length	--	11,522	--	6,915	ft



Make-Up Loss	--	4.81	--	3.50	in.
Minimum Make-Up Torque	--	--	--	3,150	ft-lbs
Maximum Make-Up Torque	--	--	--	5,250	ft-lbs

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U. S. Steel Tubular Products	1-877-893-9461
10343 Sam Houston Park Dr., #120	connections@uss.com
Houston, TX 77064	www.usstubular.com



# U. S. Steel Tubular Products

## 13.375" 48.00lbs/ft (0.330" Wall) H40

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MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	40,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	60,000	--	--	--	psi

DIMENSIONS	Pipe	BTC	LTC	STC	
Outside Diameter	13.375	--	--	14.375	in.
Wall Thickness	0.330	--	--	--	in.
Inside Diameter	12.715	--	--	12.715	in.
Standard Drift	12.559	12.559	--	12.559	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	48.00	--	--	--	lbs/ft
Plain End Weight	46.02	--	--	--	lbs/ft

PERFORMANCE	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	740	740	--	740	psi
Minimum Internal Yield Pressure	1,730	1,730	--	1,730	psi
Minimum Pipe Body Yield Strength	541	--	--	--	1,000 lbs
Joint Strength	--	--	--	322	1,000 lbs
Reference Length	--	--	--	4,473	ft

MAKE-UP DATA	Pipe	BTC	LTC	STC	
Make-Up Loss	--	--	--	3.50	in.
Minimum Make-Up Torque	--	--	--	2,420	ft-lbs
Maximum Make-Up Torque	--	--	--	4,030	ft-lbs

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 www.usstubular.com



Fluid Technology

ContiTech Beattie Corp.  
Website: [www.contitechbeattie.com](http://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 Brittnore Park Drive,  
Houston, TX 77041  
Phone: +1 (832) 327-0141  
Fax: +1 (832) 327-0148  
[www.contitechbeattie.com](http://www.contitechbeattie.com)



RIG 212



**QUALITY DOCUMENT**

**PHOENIX RUBBER**

**INDUSTRIAL LTD.**

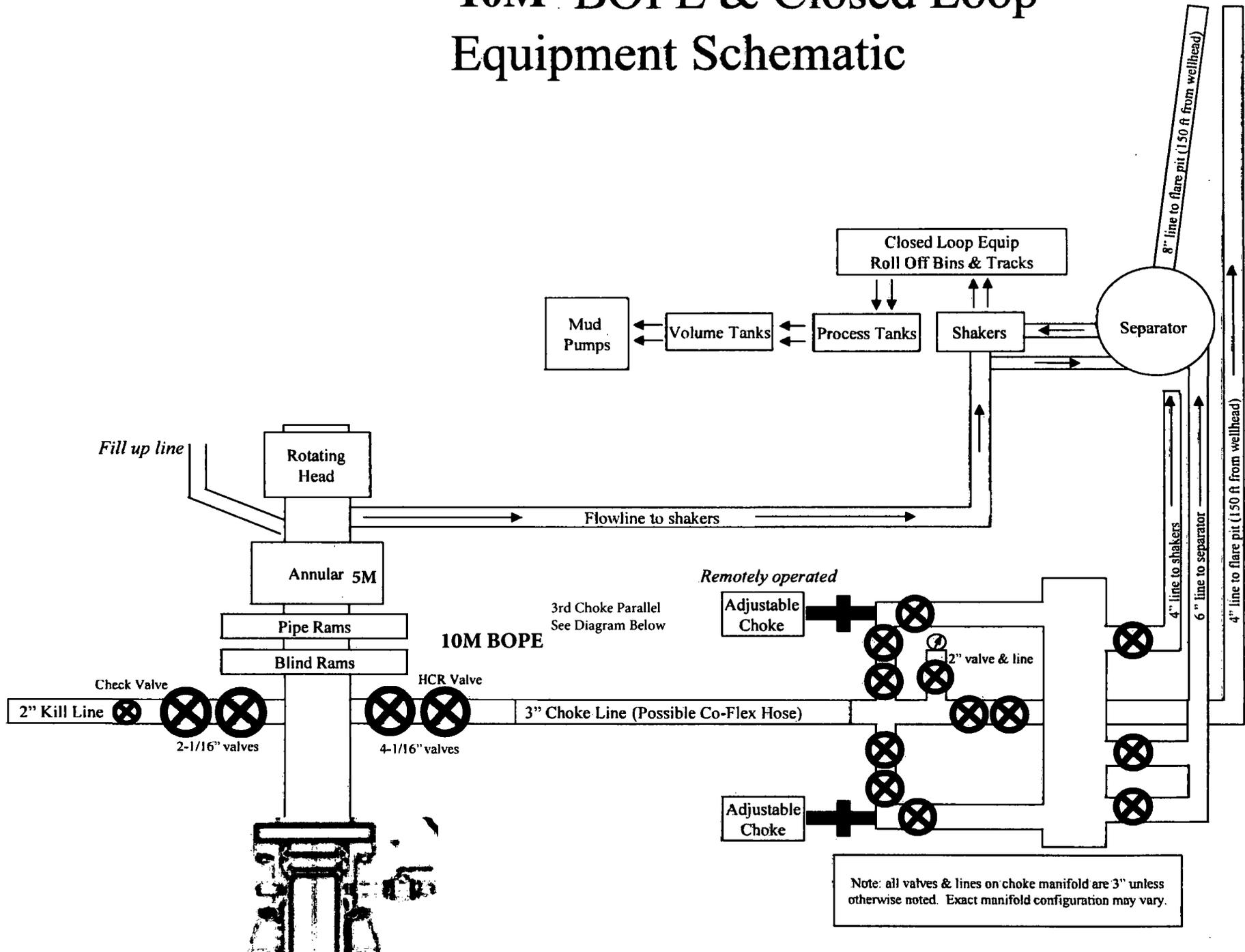
6728 Szeged, Budapesti út 10, Hungary • H-6701 Szeged, P. O. Box 152  
Phone: (3662) 568-737 • Fax: (3662) 568-738

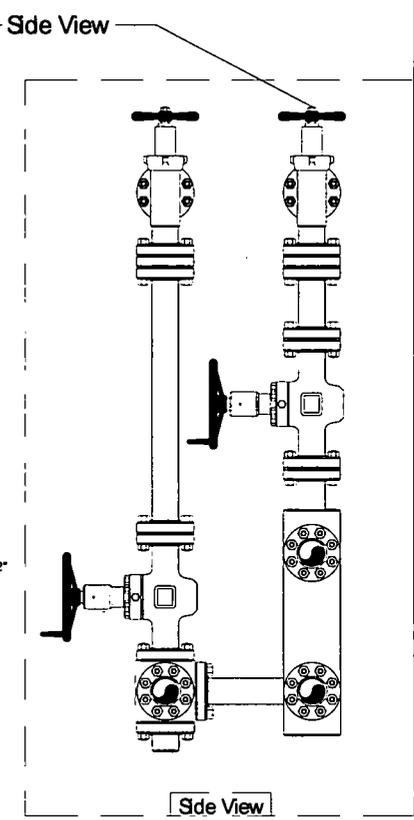
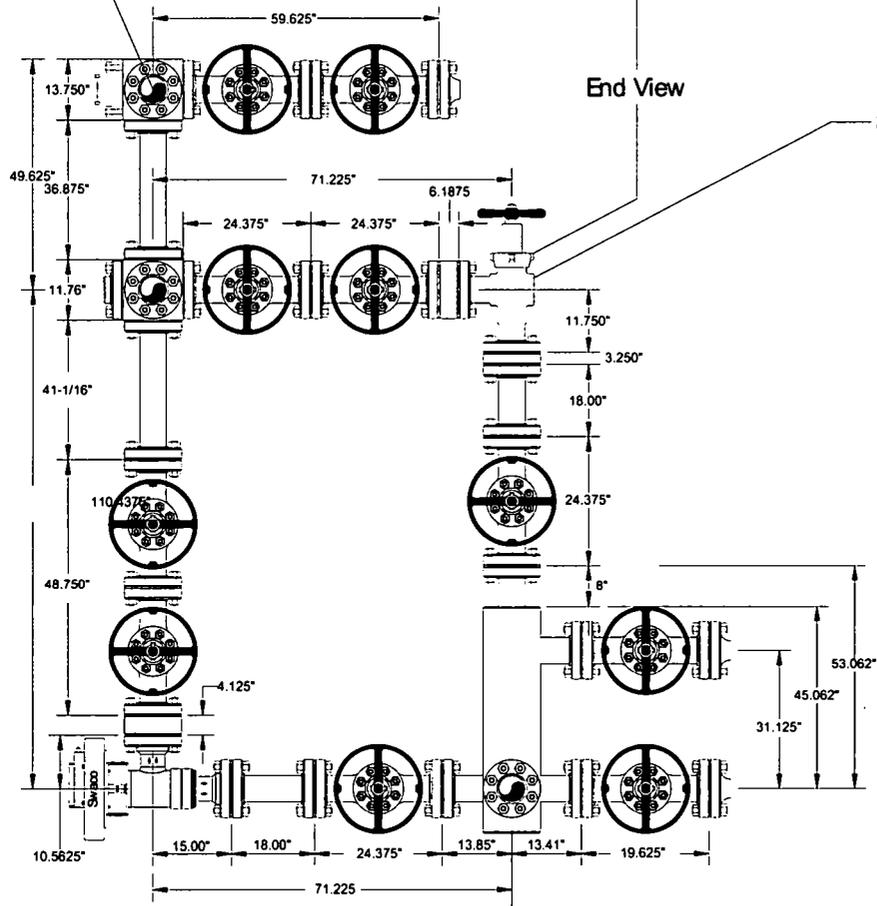
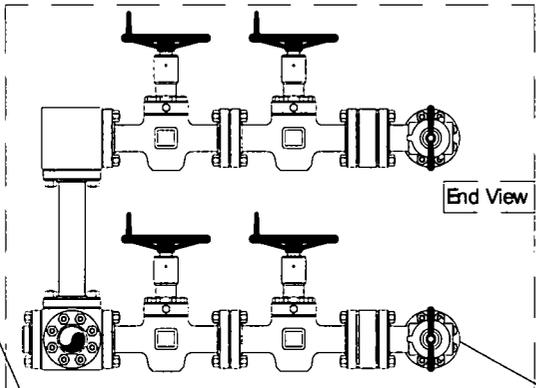
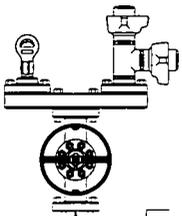
SALES & MARKETING: H-1092 Budapest, Réday u. 42-44, Hungary • H-1440 Budapest, P. O. Box 26  
Phone: (361) 458-4200 • Fax: (361) 217-2872, 456-4273 • www.taurusemerge.hu

<b>QUALITY CONTROL INSPECTION AND TEST CERTIFICATE</b>			CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.			P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose		
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH: 11,43 m		
W.P. 68,96 MPa	10000	psi	T.P. 103,4 MPa	15000 psi
			Duration:	60 min.
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p>				
<b>COUPLINGS</b>				
Type		Serial N°		Quality
3" coupling with 4 1/16" Flange end		720 719		AISI 4130
				AISI 4130
				C7626
				47357
<p>API Spec 16 C Temperature rate: "B"</p>				
All metal parts are flawless				
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.				
Date:	Inspector		Quality Control	
29. April. 2002.			<p>PHOENIX RUBBER Industrial Ltd. Hose Inspection and TESTING CENTER PHOENIX RUBBER Q.C.</p>	



# 10M BOPE & Closed Loop Equipment Schematic





Helmerich & Payne  
Rg 282



Name Jeanette	Date 7-19-06	Working Pressure	# J5132-E
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## Devon Energy Annular Preventer Summary

### 1. Component and Preventer Compatibility Table

The table below, which covers the drilling and casing of the 10M MASP portion of the well, outlines the tubulars and the compatible preventers in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

6-3/4" Production hole section, 10M requirement

Component	OD	Preventer	RWP
Drillpipe	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
HWDP	4.5"	Fixed lower 4.5" Upper 4.5-7" VBR	10M
Drill collars and MWD tools	4.75"	Upper 4.5-7" VBR	10M
Mud Motor	4.75"	Upper 4.5-7" VBR	10M
Production casing	5.5"	Upper 4.5-7" VBR	10M
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram. Compatible range listed in chart.

### 2. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The pressure at which control is swapped from the annular to another compatible ram is variable, but the operator will document in the submission their operating pressure limit. The operator may chose an operating pressure less than or equal to RWP, but in no case will it exceed the RWP of the annular preventer.

#### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

## **Devon Energy Annular Preventer Summary**

### General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to the upper pipe ram.

### General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP and SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach the RWP of the annular preventer, confirm spacing and swap to compatible pipe ram.

### General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams or BSR. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

## Devon Energy Annular Preventer Summary

### General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
  - a. Perform flowcheck, if flowing:
  - b. Sound alarm (alert crew)
  - c. Stab full opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper pipe ram.
  - e. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
  
2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full opening safety valve and close
  - c. Space out drill string with upset just beneath the compatible pipe ram.
  - d. Shut-in using compatible pipe ram. (HCR and choke will already be in the closed position.)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - h. Regroup and identify forward plan
  
3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
  - a. Sound alarm (alert crew)
  - b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
  - c. If impossible to pick up high enough to pull the string clear of the stack:
  - d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
  - e. Space out drill string with tooljoint just beneath the upper pipe ram.
  - f. Shut-in using upper pipe ram. (HCR and choke will already be in the closed position.)
  - g. Confirm shut-in
  - h. Notify toolpusher/company representative
  - i. Read and record the following:
    - i. SIDPP and SICP
    - ii. Pit gain
    - iii. Time
  - j. Regroup and identify forward plan

**Section 1 - General**

Would you like to address long-term produced water disposal? NO

**Section 2 - Lined Pits**

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

### **Section 3 - Unlined Pits**

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

### **Section 4 - Injection**

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

### **Section 5 - Surface Discharge**

**Would you like to utilize Surface Discharge PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

### **Section 6 - Other**

**Would you like to utilize Other PWD options? NO**

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**



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

**Bond Information**

**Federal/Indian APD: FED**

**BLM Bond number: CO1104**

**BIA Bond number:**

**Do you have a reclamation bond? NO**

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**