Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

## SUNDRY NOTICES AND REPORTS ON WELLS

***Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***

***SUBMIT IN TRIPLICATE - Other instructions on page 2***

5. Lease Serial No.
NMNM43744

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
PLATINUM MDP1 34-3 FEDERAL COM 171

2. Name of Operator
OXY USA INCORPORATED
Contact: SARAH E CHAPMAN
E-Mail: SARAH_CHAPMAN@OXY.COM

9. API Well No.
30-015-45230-00-X1

3a. Address
5 GREENWAY PLAZA SUITE 110
HOUSTON, TX 77046-0521

3b. Phone No. (include area code)
Ph: 713-350-4997

10. Field and Pool or Exploratory Area
PURPLE SAGE-WOLFCAMP (GAS)

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 34 T23S R31E NWNW 220FNL 1027FWL

11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☒ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Subsequent Report | ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other Change to Original APD |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

OXY USA Inc. respectfully requests to amend the approved APD because of the following changes:
1. BHL is moving 110' west to 330' FWL
2. Landing zone change
3. Cement Design (3-string to 4-string)
4. Casing Design
5. Updated Well Control

Please find updated documentation for your use.
Thank you.

RECEIVED
JUL 23 2019
DISTRICT II-ARTESIA O.C.D.

Carlsbad Field Office
OCD Artesia

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #466568 verified by the BLM Well Information System**
**For OXY USA INCORPORATED, sent to the Carlsbad**
**Committed to AFMSS for processing by PRISCILLA PEREZ on 05/28/2019 (19PP2237SE)**

Name *(Printed/Typed)* SARAH E CHAPMAN — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 05/23/2019

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By NDUNGU KAMAU — Title PETROLEUM ENGINEER — Date 07/10/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Carlsbad

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

RWP 10-25-19

## Revisions to Operator-Submitted EC Data for Sundry Notice #466568

| | Operator Submitted | BLM Revised (AFMSS) |
|---|---|---|
| Sundry Type: | APDCH<br>NOI | APDCH<br>NOI |
| Lease: | NMNM43744 | NMNM43744 |
| Agreement: | | |
| Operator: | OXY USA INC.<br>P.O. BOX 4294<br>HOUSTON, TX 77210<br>Ph: 713-350-4997 | OXY USA INCORPORATED<br>5 GREENWAY PLAZA SUITE 110<br>HOUSTON, TX 77046-0521<br>Ph: 713.350.4816 |
| Admin Contact: | SARAH E CHAPMAN<br>REGULATORY SPECIALIST<br>E-Mail: SARAH_CHAPMAN@OXY.COM<br>Cell: 281-642-5503<br>Ph: 713-350-4997 | SARAH E CHAPMAN<br>REGULATORY SPECIALIST<br>E-Mail: SARAH_CHAPMAN@OXY.COM<br>Cell: 281-642-5503<br>Ph: 713-350-4997 |
| Tech Contact: | SARAH E CHAPMAN<br>REGULATORY SPECIALIST<br>E-Mail: SARAH_CHAPMAN@OXY.COM<br>Cell: 281-642-5503<br>Ph: 713-350-4997 | SARAH E CHAPMAN<br>REGULATORY SPECIALIST<br>E-Mail: SARAH_CHAPMAN@OXY.COM<br>Cell: 281-642-5503<br>Ph: 713-350-4997 |
| Location:<br>State:<br>County: | <br>NM<br>EDDY COUNTY | <br>NM<br>EDDY |
| Field/Pool: | PURPLE SAGE WOLFCAMP | PURPLE SAGE-WOLFCAMP (GAS) |
| Well/Facility: | PLATINUM MDP1 34-3 FEERAL COM 171H<br>Sec 34 T23S R31E NWNW 220FNL 1027FWL<br>32.267579 N Lat, 103.770884 W Lon | PLATINUM MDP1 34-3 FEDERAL COM 171H<br>Sec 34 T23S R31E NWNW 220FNL 1027FWL |

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | OXY USA INCORPORATED |
| **LEASE NO.:** | NMNM43744 |
| **WELL NAME & NO.:** | 171H:PLATINUM MDP1 34-3 FDC |
| **SURFACE HOLE FOOTAGE:** | 220'/N & 1027'/W |
| **BOTTOM HOLE FOOTAGE** | 20'/S & 330'/E |
| **LOCATION:** | T-23S, R-31E, S34. NMPM |
| **COUNTY:** | EDDY, NM |

COA

| | | | |
|---|---|---|---|
| H2S | ○ Yes | ◉ No | |
| Potash | ○ None | ○ Secretary | ◉ R-111-P |
| Cave/Karst Potential | ◉ Low | ○ Medium | ○ High |
| Variance | ○ None | ◉ Flex Hose | ○ Other |
| Wellhead | ○ Conventional | ○ Multibowl | ◉ Both |
| Other | ☐ 4 String Area | ☐ Capitan Reef | ☐ WIPP |
| Other | ☑ Fluid Filled | ☑ Cement Squeeze | ☐ Pilot Hole |
| Special Requirements | ☐ Water Disposal | ☑ COM | ☐ Unit |

**ALL PREVIOUS COAs STILL APPLY**

**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 **13-3/8** inch surface casing shall be set at approximately **582** feet (a minimum of **70 feet (Eddy 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 **24 hours in the Potash Area** 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.

2. The **9-5/8** inch surface casing shall be set at approximately **4358** feet. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

**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.
  **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

**2nd Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

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

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**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 9-5/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM. Excess calculates to negative 11% - additional cement might be required.**

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

- Cement should tie-back **500 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 20% - additional 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 **3000 (3M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 2nd 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.

**D. SPECIAL REQUIREMENT (S)**

**BOP Break Testing Variance**

- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any BOP Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

**Offline Cementing**

- Contact the BLM prior to the commencement of any offline cementing procedure.

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all

such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

# 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 2nd 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

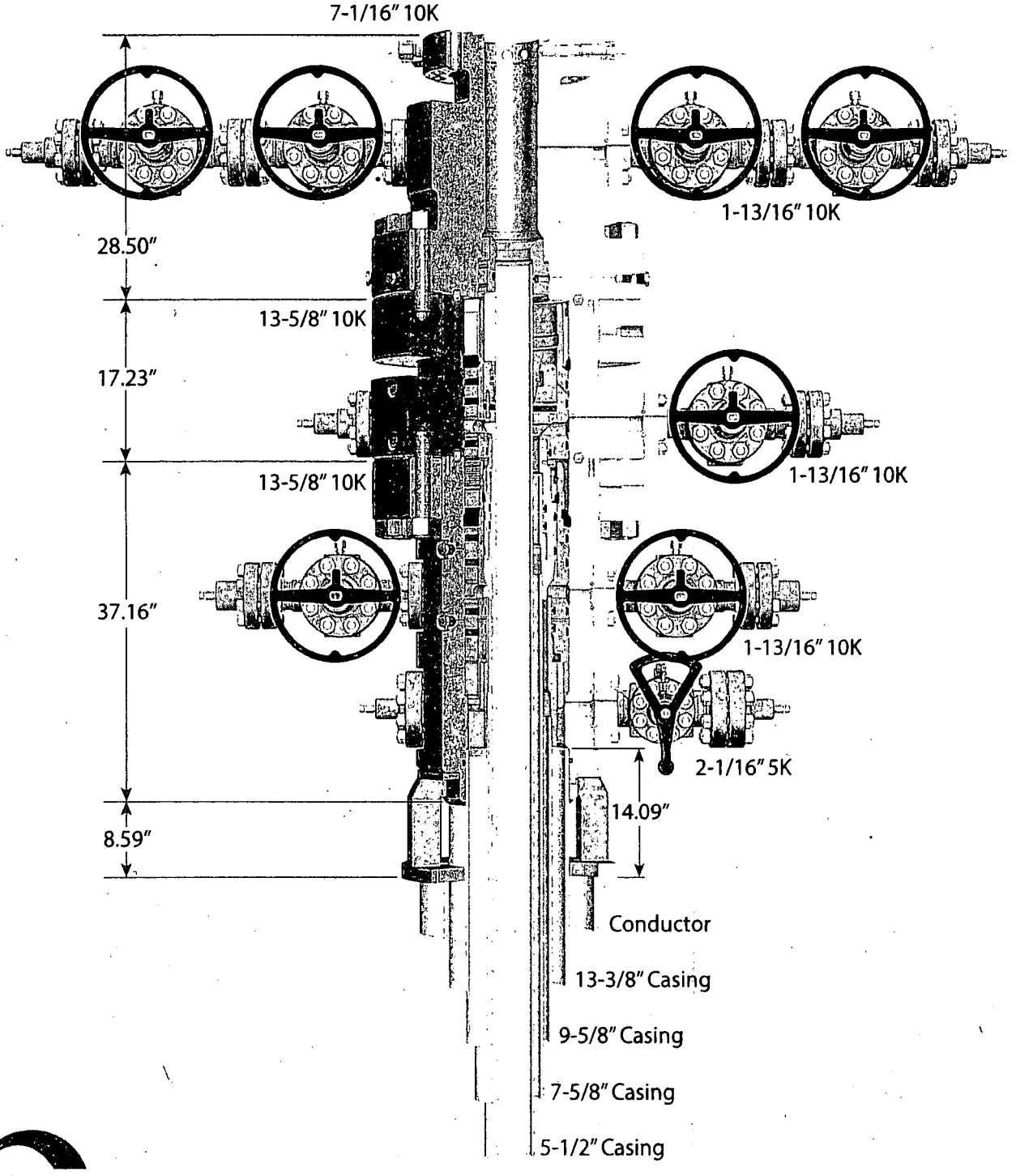
All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location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

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

**NMK7102019**

CAMERON
A Schlumberger Company

# 13-5/8" 10K MN-DS Wellhead
## Four String




OXY

1615045

NOTE. All dimensions on this drawing are estimated measurements and should be evaluated by engineering.

# PERFORMANCE DATA

**TMK UP TORQ™ DQW** **5.500 in** **20.00 lbs/ft** **P110 CY**

**Technical Data Sheet**

## Tubular Parameters

| | | | | | |
|---|---|---|---|---|---|
| Size | 5.500 | in | Minimum Yield | 110,000 | psi |
| Nominal Weight | 20.00 | lbs/ft | Minimum Tensile | 125,000 | psi |
| Grade | P110 CY | | Yield Load | 641,000 | lbs |
| PE Weight | 19.81 | lbs/ft | Tensile Load | 729,000 | lbs |
| Wall Thickness | 0.361 | in | Min. Internal Yield Pressure | 12,640 | psi |
| Nominal ID | 4.778 | in | Collapse Pressure | 11,110 | psi |
| Drift Diameter | 4.653 | in | | | |
| Nom. Pipe Body Area | 5.828 | in² | | | |

## Connection Parameters

| | | |
|---|---|---|
| Connection OD | 6.050 | in |
| Connection ID | 4.778 | in |
| Make-Up Loss | 4.324 | in |
| Critical Section Area | 5.828 | in² |
| Tension Efficiency | 100.0 | % |
| Compression Efficiency | 100.0 | % |
| Yield Load In Tension | 641,000 | lbs |
| Min. Internal Yield Pressure | 12,640 | psi |
| Collapse Pressure | 11,110 | psi |
| Uniaxial Bending | 92 | °/ 100 ft |

## Make-Up Torques

| | | |
|---|---|---|
| Min. Make-Up Torque | 14,000 | ft-lbs |
| Opt. Make-Up Torque | 16,000 | ft-lbs |
| Max. Make-Up Torque | 18,000 | ft-lbs |
| Operating Torque | 36,800 | ft-lbs |
| Yield Torque | 46,000 | ft-lbs |

Printed on: March-05-2019



TMK IPSCO

# PERFORMANCE DATA

**TMK UP DQX** **5.500 in** **20.00 lbs/ft** **P-110**
**Technical Data Sheet**

## Tubular Parameters

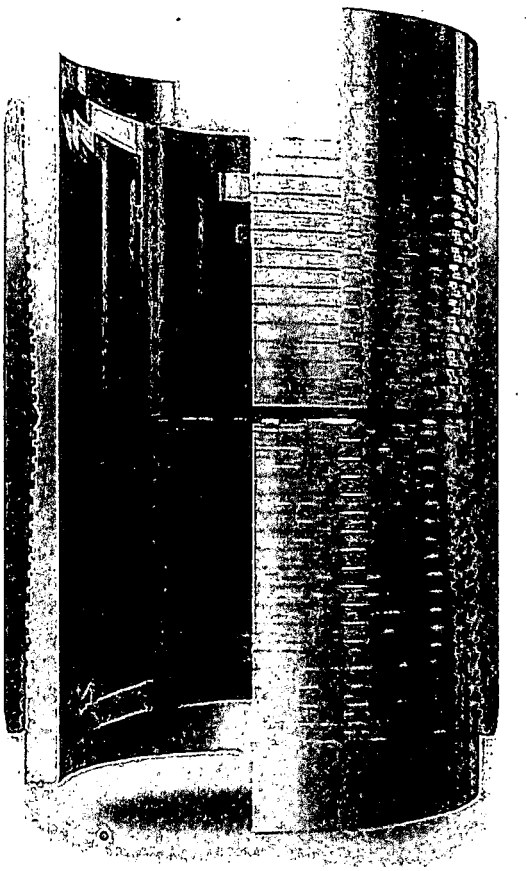
| | | | | | |
|---|---|---|---|---|---|
| Size | 5.500 | in | Minimum Yield | 110,000 | psi |
| Nominal Weight | 20.00 | lbs/ft | Minimum Tensile | 125,000 | psi |
| Grade | P-110 | | Yield Load | 641,000 | lbs |
| PE Weight | 19.81 | lbs/ft | Tensile Load | 729,000 | lbs |
| Wall Thickness | 0.361 | in | Min. Internal Yield Pressure | 12,600 | psi |
| Nominal ID | 4.778 | in | Collapse Pressure | 11,100 | psi |
| Drift Diameter | 4.653 | in | | | |
| Nom. Pipe Body Area | 5.828 | in² | | | |

## Connection Parameters

| | | |
|---|---|---|
| Connection OD | 6.050 | in |
| Connection ID | 4.778 | in |
| Make-Up Loss | 4.122 | in |
| Critical Section Area | 5.828 | in² |
| Tension Efficiency | 100.0 | % |
| Compression Efficiency | 100.0 | % |
| Yield Load In Tension | 641,000 | lbs |
| Min. Internal Yield Pressure | 12,600 | psi |
| Collapse Pressure | 11,100 | psi |

## Make-Up Torques

| | | |
|---|---|---|
| Min. Make-Up Torque | 11,600 | ft-lbs |
| Opt. Make-Up Torque | 12,900 | ft-lbs |
| Max. Make-Up Torque | 14,100 | ft-lbs |
| Yield Torque | 20,600 | ft-lbs |



**Printed on: July-29-2014**



IPSCO

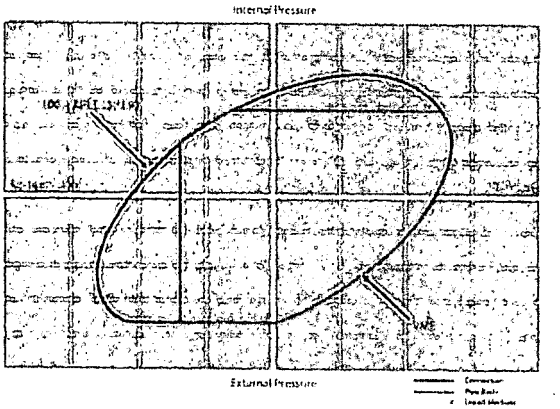
# TECHNICAL DATA SHEET TMK UP DQX 5.5 X 20 P110

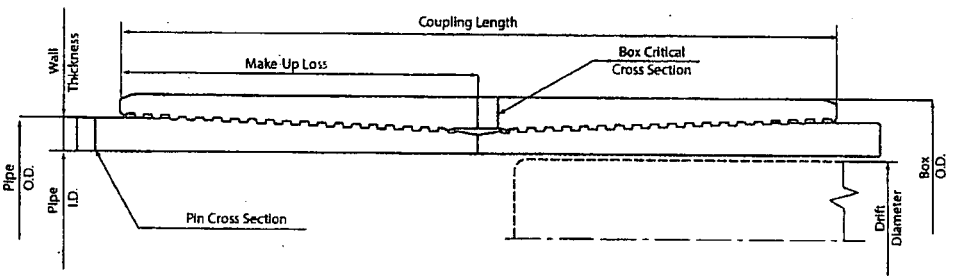
| TUBULAR PARAMETERS | |
|---|---|
| Nominal OD, (inch) | 5.500 |
| Wall Thickness, (inch) | 0.361 |
| Pipe Grade | P110 |
| Coupling | Regular |
| Coupling Grade | P110 |
| Drift | Standard |

| CONNECTION PARAMETERS | |
|---|---|
| Connection OD (inch) | 6.05 |
| Connection ID, (inch) | 4.778 |
| Make-Up Loss, (inch) | 4.122 |
| Connection Critical Area, (sq inch) | 5.828 |
| Yield Strength in Tension, (klbs) | 641 |
| Yeld Strength in Compression, (klbs) | 641 |
| Tension Efficiency | 100% |
| Compression Efficiency | 100% |
| Min. Internal Yield Pressure, (psi) | 12 640 |
| Collapse Pressure, (psi) | 11 110 |
| Uniaxial Bending (deg/100ft) | 91 7 |

| MAKE-UP TORQUES | |
|---|---|
| Yield Torque, (ft-lb) | 20 600 |
| Minimum Make-Up Torque, (ft-lb) | 11 600 |
| Optimum Make-Up Torque, (ft-lb) | 12 900 |
| Maximum Make-Up Torque, (ft-lb) | 14 100 |

| PIPE BODY PROPERTIES | |
|---|---|
| PE Weight, (lbs/ft) | 19.81 |
| Nominal Weight, (lbs/ft) | 20.00 |
| Nominal ID, (inch) | 4.778 |
| Drift Diameter, (inch) | 4.653 |
| Nominal Pipe Body Area, (sq inch) | 5.828 |
| Yield Strength in Tension, (klbs) | 641 |
| Min. Internal Yield Pressure, (psi) | 12 640 |
| Collapse Pressure, (psi) | 11 110 |



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# PERFORMANCE DATA

**TMK UP SF TORQ™** **5.500 in** **20.00 lbs/ft** **P110 HC**

**Technical Data Sheet**

## Tubular Parameters

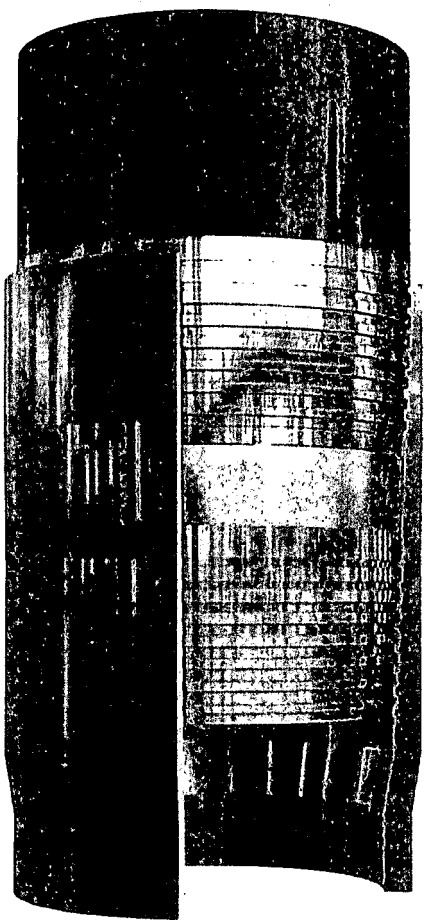
| | | | | | |
|---|---|---|---|---|---|
| Size | 5.500 | in | Minimum Yield | 110,000 | psi |
| Nominal Weight | 20.00 | lbs/ft | Minimum Tensile | 125,000 | psi |
| Grade | P110 HC | | Yield Load | 641,000 | lbs |
| PE Weight | 19.81 | lbs/ft | Tensile Load | 728,000 | lbs |
| Wall Thickness | 0.361 | in | Min. Internal Yield Pressure | 12,640 | psi |
| Nominal ID | 4.778 | in | Collapse Pressure | 12,780 | psi |
| Drift Diameter | 4.653 | in | | | |
| Nom. Pipe Body Area | 5.828 | in² | | | |

## Connection Parameters

| | | |
|---|---|---|
| Connection OD | 5.777 | in |
| Connection ID | 4.734 | in |
| Make-Up Loss | 5.823 | in |
| Critical Section Area | 5.875 | in² |
| Tension Efficiency | 90.0 | % |
| Compression Efficiency | 90.0 | % |
| Yield Load In Tension | 576,000 | lbs |
| Min. Internal Yield Pressure | 12,640 | psi |
| Collapse Pressure | 12,780 | psi |
| Uniaxial Bending | 83 | °/ 100 ft |

## Make-Up Torques

| | | |
|---|---|---|
| Min. Make-Up Torque | 15,700 | ft-lbs |
| Opt. Make-Up Torque | 19,600 | ft-lbs |
| Max. Make-Up Torque | 21,600 | ft-lbs |
| Operating Torque | 29,000 | ft-lbs |
| Yield Torque | 36,000 | ft-lbs |



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TMK IPSCO

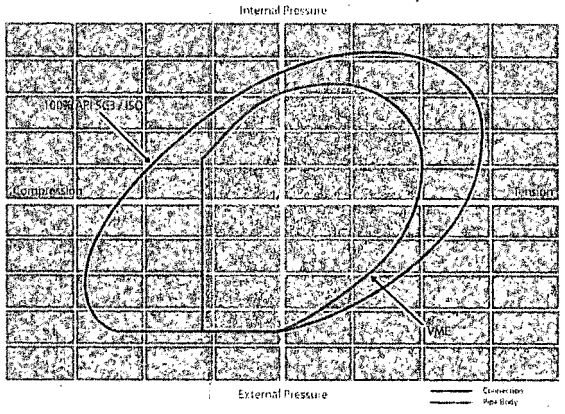
# TECHNICAL DATA SHEET TMK UP FJ 7.625 X 26.4 L80 HC

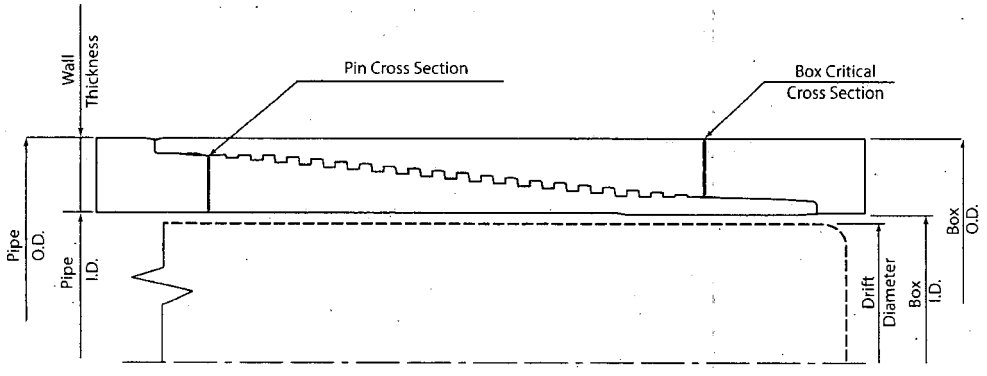
| TUBULAR PARAMETERS | |
|---|---|
| Nominal OD, (inch) | 7.625 |
| Wall Thickness, (inch) | 0.328 |
| Pipe Grade | L80 HC |
| Drift | Standard |

| CONNECTION PARAMETERS | |
|---|---|
| Connection OD (inch) | 7.63 |
| Connection ID, (inch) | 6.975 |
| Make-Up Loss, (inch) | 4.165 |
| Connection Critical Area, (sq inch) | 2.520 |
| Yield Strength in Tension, (klbs) | 347 |
| Yeld Strength in Compression, (klbs) | 347 |
| Tension Efficiency | 58% |
| Compression Efficiency | 58% |
| Min. Internal Yield Pressure, (psi) | 6 020 |
| Collapse Pressure, (psi) | 3 910 |
| Uniaxial Bending (deg/100ft) | 28.0 |

| MAKE-UP TORQUES | |
|---|---|
| Yield Torque, (ft-lb) | 22 200 |
| Minimum Make-Up Torque, (ft-lb) | 12 500 |
| Optimum Make-Up Torque, (ft-lb) | 13 900 |
| Maximum Make-Up Torque, (ft-lb) | 15 300 |

| PIPE BODY PROPERTIES | |
|---|---|
| PE Weight, (lbs/ft) | 25.56 |
| Nominal Weight, (lbs/ft) | 26.40 |
| Nominal ID, (inch) | 6.969 |
| Drift Diameter, (inch) | 6.844 |
| Nominal Pipe Body Area, (sq inch) | 7.519 |
| Yield Strength in Tension, (klbs) | 601 |
| Min. Internal Yield Pressure, (psi) | 6 020 |
| Collapse Pressure, (psi) | 3 910 |



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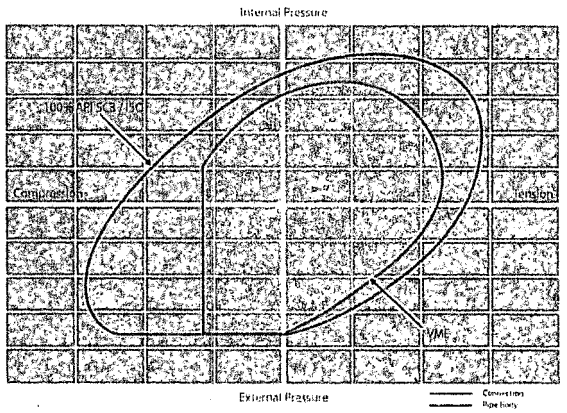
# TECHNICAL DATA SHEET TMK UP SF 7.625 X 26.4 L80 HC

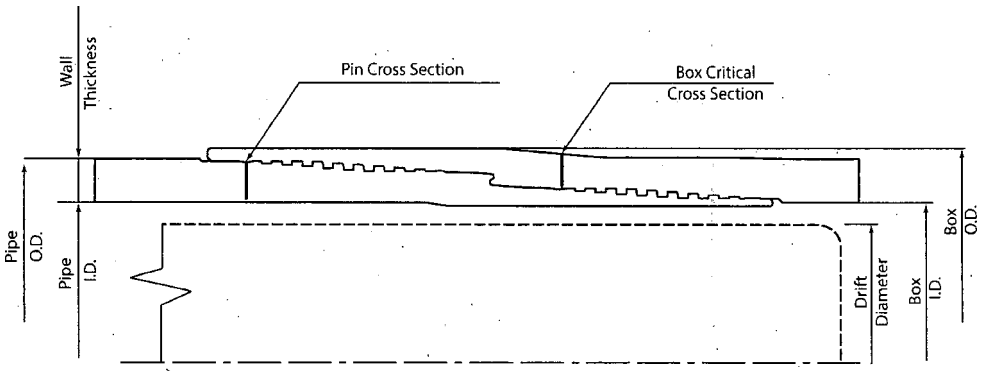
| TUBULAR PARAMETERS | |
|---|---|
| Nominal OD, (inch) | 7.625 |
| Wall Thickness, (inch) | 0.328 |
| Pipe Grade | L80 HC |
| Drift | Standard |

| CONNECTION PARAMETERS | |
|---|---|
| Connection OD (inch) | 7.79 |
| Connection ID, (inch) | 6.938 |
| Make-Up Loss, (inch) | 6.029 |
| Connection Critical Area, (sq inch) | 5.948 |
| Yield Strength in Tension, (klbs) | 533 |
| Yeld Strength in Compression, (klbs) | 533 |
| Tension Efficiency | 89% |
| Compression Efficiency | 89% |
| Min. Internal Yield Pressure, (psi) | 6 020 |
| Collapse Pressure, (psi) | 3 910 |
| Uniaxial Bending (deg/100ft) | 42.7 |

| MAKE-UP TORQUES | |
|---|---|
| Yield Torque, (ft-lb) | 22 600 |
| Minimum Make-Up Torque, (ft-lb) | 15 000 |
| Optimum Make-Up Torque, (ft-lb) | 16 500 |
| Maximum Make-Up Torque, (ft-lb) | 18 200 |

| PIPE BODY PROPERTIES | |
|---|---|
| PE Weight, (lbs/ft) | 25.56 |
| Nominal Weight, (lbs/ft) | 26.40 |
| Nominal ID, (inch) | 6.969 |
| Drift Diameter, (inch) | 6.844 |
| Nominal Pipe Body Area, (sq inch) | 7.519 |
| Yield Strength in Tension, (klbs) | 601 |
| Min. Internal Yield Pressure, (psi) | 6 020 |
| Collapse Pressure, (psi) | 3 910 |



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