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Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC065607

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. (320548)
VERNA RAE FEDERAL COM 123H

2. Name of Operator
MATADOR PRODUCTION COMPANY (228937)

9. API Well No.
30-025-44355

3a. Address
5400 LBJ Freeway, Suite 1500 Dallas TX 752

3b. Phone No. *(include area code)*
(972)371-5200

10. Field and Pool, or Exploratory 96637
TEAS BONE SPRINGS EAST / TEAS BC

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface LOT 2 / 230 FNL / 1815 FEL / LAT 32.6087632 / LONG -103.5967967

At proposed prod. zone SWSE / 240 FSL / 1980 FEL / LAT 32.5955565 / LONG -103.597427

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 6 / T20S / R34E / NMP

14. Distance in miles and direction from nearest town or post office*
19 miles

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) | 16. No. of acres in lease | 17. Spacing Unit dedicated to this well |
|---|---|---|
| 230 feet | 722.39 | 160 |
| **18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.** | **19. Proposed Depth** | **20. BLM/BIA Bond No. on file** |
| 30 feet | 10335 feet / 14982 feet | FED: NMB001079 |
| **21. Elevations (Show whether DF, KDB, RT, GL, etc.)** | **22. Approximate date work will start*** | **23. Estimated duration** |
| 3620 feet | 09/01/2017 | 90 days |

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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 required by the BLM.

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Brian Wood / Ph: (505)466-8120 | 06/16/2017 |

Title
President

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Bobby Ballard / Ph: (575)234-2235 | 01/02/2018 |
| **Title** | **Office** | |
| Natural Resource Specialist | 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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 01/02/2018

OK
01/10/18

Double Lined

## 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 1: 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 directionally 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.

## 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 Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)



**Approval Date: 01/02/2018**

## Additional Operator Remarks

### Location of Well

1. SHL: LOT 2 / 230 FNL / 1815 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.6087632 / LONG: -103.5967967 ( TVD: 0 feet, MD: 0 feet )
   PPP: SWNE / 2640 FNL / 1980 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.60214 / LONG: -103.59737 ( TVD: 10335 feet, MD: 12584 feet )
   PPP: LOT 2 / 230 FNL / 1815 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.6087632 / LONG: -103.5967967 ( TVD: 0 feet, MD: 0 feet )
   BHL: SWSE / 240 FSL / 1980 FEL / TWSP: 20S / RANGE: 34E / SECTION: 6 / LAT: 32.5955565 / LONG: -103.597427 ( TVD: 10335 feet, MD: 14982 feet )

## BLM Point of Contact

Name: Sipra Dahal
Title: Legal Instruments Examiner
Phone: 5752345983
Email: sdahal@blm.gov



**Approval Date: 01/02/2018**

## 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.

AFMSS

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

# Application Data Report

01/02/2018

**APD ID:** 10400015062 **Submission Date:** 06/16/2017

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

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

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - General

**APD ID:** 10400015062 **Tie to previous NOS?** **Submission Date:** 06/16/2017

**BLM Office:** CARLSBAD **User:** Brian Wood **Title:** President

**Federal/Indian APD:** FED **Is the first lease penetrated for production Federal or Indian?** FED

**Lease number:** NMLC065607 **Lease Acres:** 722.39

**Surface access agreement in place?** **Allotted?** **Reservation:**

**Agreement in place?** NO **Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** NO

**Permitting Agent?** YES **APD Operator:** MATADOR PRODUCTION COMPANY

**Operator letter of designation:**

## Operator Info

**Operator Organization Name:** MATADOR PRODUCTION COMPANY

**Operator Address:** 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

**Operator PO Box:**

**Operator City:** Dallas **State:** TX

**Operator Phone:** (972)371-5200

**Operator Internet Address:** amonroe@matadorresources.com

## Section 2 - Well Information

**Well in Master Development Plan?** NO **Mater Development Plan name:**

**Well in Master SUPO?** NO **Master SUPO name:**

**Well in Master Drilling Plan?** NO **Master Drilling Plan name:**

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H **Well API Number:**

**Field/Pool or Exploratory?** Field and Pool **Field Name:** TEAS BONE SPRINGS EAST **Pool Name:** TEAS BONE SPRING EAST

**Is the proposed well in an area containing other mineral resources?** POTASH

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**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:** VERNA RAE **Number:** SLOT 3

**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:** 19 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 230 FT

**Reservoir well spacing assigned acres Measurement:** 160 Acres

**Well plat:** VernaRae_123H_Plat_20170928095857.PDF

**Well work start Date:** 09/01/2017 **Duration:** 90 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:** 18329

| | 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 | 230 | FNL | 1815 | FEL | 20S | 34E | 6 | Lot 2 | 32.6087632 | -103.5967967 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC065607 | 3620 | 0 | 0 |
| KOP Leg #1 | 230 | FNL | 1815 | FEL | 20S | 34E | 6 | Lot 2 | 32.6087632 | -103.5967967 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC065607 | -6142 | 9769 | 9762 |
| PPP Leg #1 | 230 | FNL | 1815 | FEL | 20S | 34E | 6 | Lot 2 | 32.6087632 | -103.5967967 | LEA | NEW MEXICO | NEW MEXICO | F | NMLC065607 | 3620 | 0 | 0 |

**APD ID:** 10400015062 **Submission Date:** 06/16/2017

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

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

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 1 | — | 3620 | 0 | 0 | OTHER : Quaternary | USEABLE WATER | No |
| 2 | RUSTLER ANHYDRITE | 2149 | 1475 | 1476 | ANHYDRITE | OTHER : Anhydrite | No |
| 3 | TOP SALT | 2019 | 1605 | 1606 | SALT | OTHER : Salt | No |
| 4 | BASE OF SALT | 460 | 3160 | 3168 | SALT | OTHER : Salt | No |
| 5 | TANSILL | 425 | 3195 | 3203 | SANDSTONE | OTHER : Sandstone | No |
| 6 | YATES | 318 | 3302 | 3310 | GYPSUM | OTHER : Gypsum | No |
| 7 | SEVEN RIVERS | -75 | 3695 | 3703 | DOLOMITE | NONE | No |
| 8 | QUEEN | -982 | 4602 | 4610 | SANDSTONE | OTHER : Sandstone | No |
| 9 | CAPITAN REEF | -1130 | 4750 | 4758 | OTHER : Carbonate | USEABLE WATER | No |
| 10 | DELAWARE SAND | -1675 | 5295 | 5303 | SANDSTONE | NATURAL GAS,CO2,OIL | No |
| 11 | BRUSHY CANYON | -2574 | 6194 | 6202 | SANDSTONE | NATURAL GAS,CO2,OIL | No |
| 12 | BONE SPRING LIME | -4659 | 8279 | 8287 | | NATURAL GAS,CO2,OIL | No |
| 13 | BONE SPRING 1ST | -5390 | 9010 | 9018 | OTHER : Carbonate | NATURAL GAS,CO2,OIL | No |
| 14 | BONE SPRING 1ST | -5780 | 9400 | 9408 | SANDSTONE | NATURAL GAS,CO2,OIL | No |
| 15 | BONE SPRING 2ND | -6075 | 9695 | 9703 | OTHER : Carbonate | NATURAL GAS,CO2,OIL | No |
| 16 | BONE SPRING 2ND | -6310 | 9930 | 9980 | SANDSTONE | NATURAL GAS,CO2,OIL | Yes |

## Section 2 - Blowout Prevention

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Pressure Rating (PSI):** 5M **Rating Depth:** 10000

**Equipment:** An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

**Requesting Variance?** YES

**Variance request:** Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used. Matador is requesting a variance to use a speed head. Speed head diameter range is 13.375" x 9.625" x 5.5" x 2.875". Matador is requesting a variance per discussion with Chris Walls to use the Choke diagram attached.

**Testing Procedure:** A third party company will test the BOPs. Surface casing will be pressure tested to 250 psi low and 2000 psi high. Intermediate casing pressure tests will be made to 250 psi low and 3000 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the surface casing and tested to 250 psi low and 2500 psi high on the intermediate casing. In the case of running a speed head with landing mandrel for 9.625" casing, initial surface casing test pressures will be 250 psi low and 3000 psi high, with wellhead seals tested to 5000 psi once the 9.625" casing has been landed and cemented.

**Choke Diagram Attachment:**

VernaRae_123H_Choke_06-13-2017.pdf

**BOP Diagram Attachment:**

VernaRae_123H_BOP_06-13-2017.pdf

## 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 | 20 | 13.375 | NEW | API | N | 0 | 1600 | 0 | 1600 | -6715 | -8315 | 1600 | J-55 | 54.5 | OTHER - BTC | 1.125 | 1.125 | DRY | 1.8 | DRY | 1.8 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 5400 | 0 | 5392 | -6715 | -12107 | 5400 | J-55 | 40 | OTHER - BTC | 1.125 | 1.125 | DRY | 1.8 | DRY | 1.8 |
| 3 | PRODUCTION | 8.75 | 5.5 | NEW | API | N | 0 | 14982 | 0 | 10335 | -6715 | -17050 | 14982 | P-110 | 20 | OTHER - DWC/C | 1.125 | 1.125 | DRY | 1.8 | DRY | 1.8 |

**Casing Attachments**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Casing_Design_Assumptions_Surface_06-13-2017.docx

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Casing_Design_Assumptions_Intermediate_06-13-2017.docx

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Casing_Design_Assumptions_Production_06-13-2017.docx

## Section 4 - Cement

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 1600 | 1764 | 1.75 | 13.5 | 3087 | 100 | Class C | 3% NaCl + LCM |
| SURFACE | Tail | | 0 | 1600 | 559 | 1.38 | 14.8 | 771 | 100 | Class C | 5% NaCl + LCM |
| INTERMEDIATE | Lead | | 0 | 5400 | 1262 | 1.81 | 13.5 | 2284 | 100 | Class C | Bentonite + 1% CaCl2 + 8% NaCl + LCM |
| INTERMEDIATE | Tail | | 0 | 5400 | 490 | 1.38 | 14.8 | 676 | 100 | Class C | 5% NaCl + LCM |
| PRODUCTION | Lead | | 0 | 14982 | 616 | 2.25 | 11.5 | 1386 | 35 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| PRODUCTION | Tail | | 0 | 14982 | 1540 | 1.38 | 13.2 | 2125 | 35 | TXI | Fluid Loss + Dispersant + Retarder + LCM |

## 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:** All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times.

**Describe the mud monitoring system utilized:** An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. Mud program is subject to change due to hole conditions. A closed loop system will be used.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1600 | SPUD MUD | 8.4 | 8.4 | | | | | | | |
| 5400 | 14982 | OTHER : Fresh water & cut brine | 9 | 9 | | | | | | | |
| 1600 | 5400 | SALT SATURATED | 10 | 10 | | | | | | | |

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

## Section 6 - Test, Logging, Coring

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

A 2-person mud logging program will be used from 1600' to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

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

CBL,GR,MWD,OTH

**Other log type(s):**

Casing collar locator

**Coring operation description for the well:**

No core or drill stem test is planned.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5115 **Anticipated Surface Pressure:** 5115

**Anticipated Bottom Hole Temperature(F):** 145

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

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

VernaRae_123H_H2S_Plan_06-13-2017.pdf

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

## Section 8 - Other Information

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

VernaRae_123H_Horizontal_Drilling_Plan_06-13-2017.pdf

**Other proposed operations facets description:**

Deficiency Letter dated 9/19/17 requested:
1) Revised Choke Diagram - Matador requested a variance per discussion with Chris Walls to use Choke diagram as originally attached;
2) 5.5 in casing specs - see revised Wellhead_Casing_Spec attachment;
3) DV Tool Depth with stage cementing information - see Other Variance request;
4) Gas Capture Plan - see revised Plat attachment.

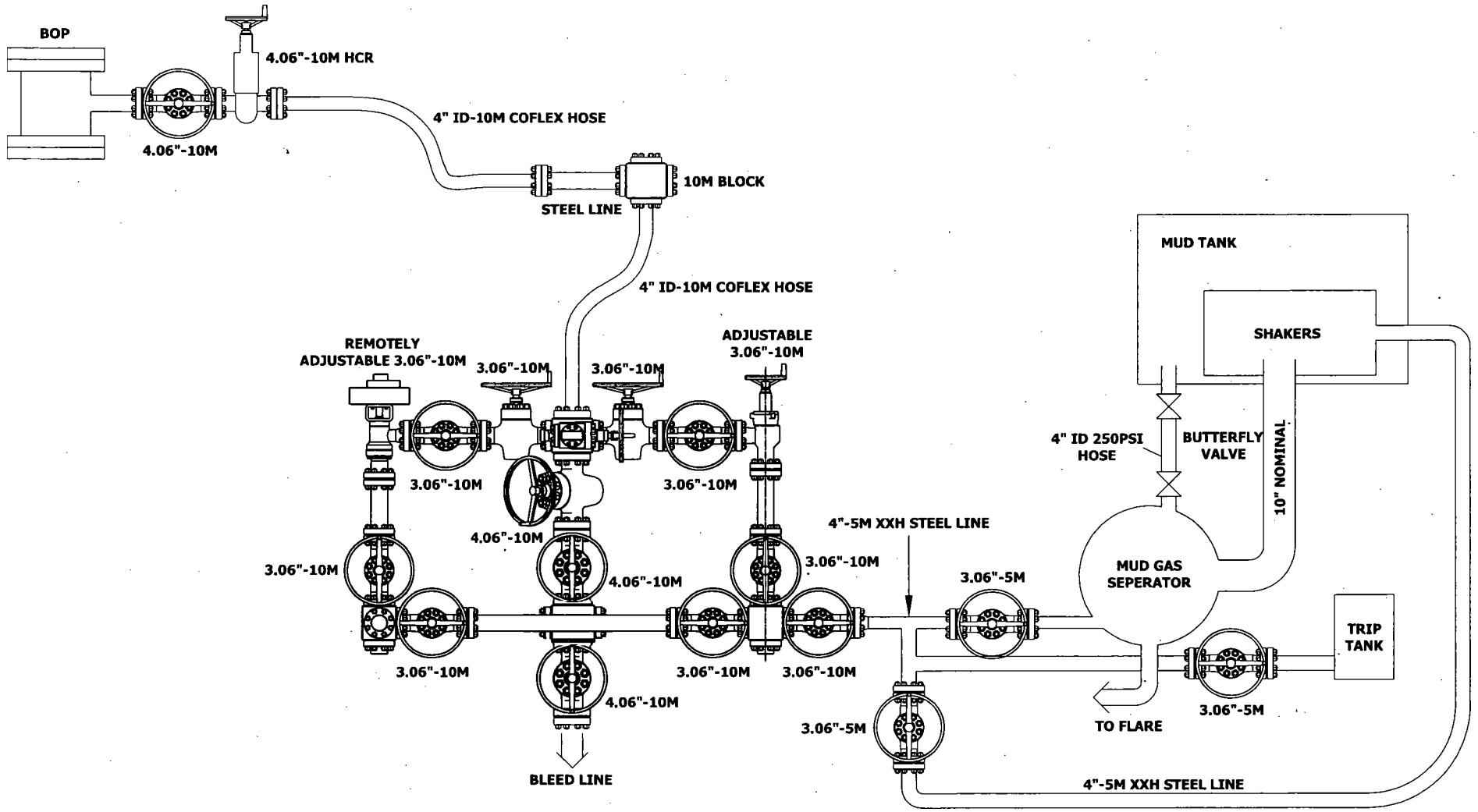
**Other proposed operations facets attachment:**

VernaRae_123H_General_Drill_Plan_06-13-2017.pdf

VernaRae_123H_Wellhead_Casing_Spec_20170928091111.pdf

**Other Variance attachment:**

VernaRae_123H_DV_Tool_Variance_Request_20171006090044.pdf




WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

GENERAL WELDING NOTE:
ALL ACCESSIBLE CONTACT SURFACES SHALL BE JOINED WITH CONTINOUS 45 DEGREE FILLET WELDS. WELD SIZE TO BE 1/16 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 5/16 INCH THICKNESS AND 1/8 INCH SMALLER THAN THINNER MEMBER JOINED UP TO 3/4 INCH THICKNESS
WELDMENT TOLERANCES = +/- 1/16

MACHINING TOLERANCES
1 PLACE DECIMAL = ±.1
2 PLACE DECIMAL = ±.03
3 PLACE DECIMAL = ±.015
FRACTIONAL TOLERANCES = 1/64
INSIDE MACHINED CORNER RADII = ± .031
CHAMFER OUTSIDE CORNERS .03 X 45 DEG
ANGLE TOLERANCES = ±1 DEGREE
MACHINED SURFACE FINISH 125 RMS
ALL UNSPECIFIED DIMENSIONS ARE IN INCHES

| REV | DATE | DESCRIPTION | DRWN BY | CHK BY | APRVD ENG. |
|---|---|---|---|---|---|
| 02 | 8-3-15 | ISSUED FOR INFORMATION | CP | CSL | |
| 01 | 7-9-15 | ISSUED FOR INFORMATION | CSL | | |



PATTERSON-UTI DRILLING COMPANY LLC

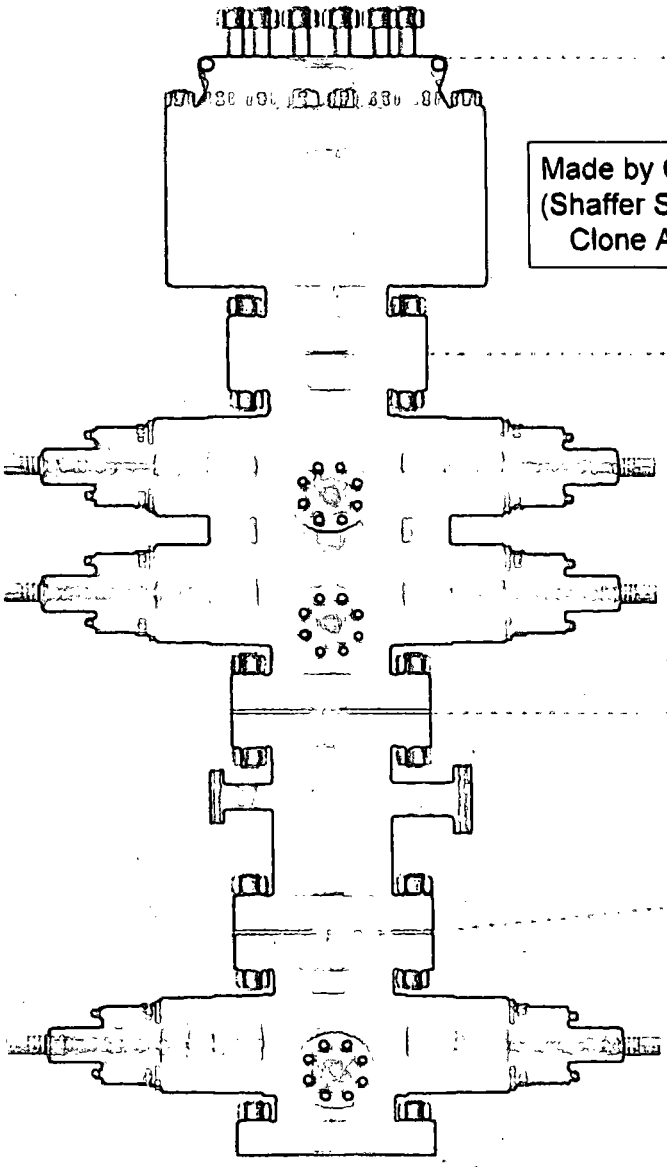
CHOKE MANIFOLD

10M CHOKE ARRANGEMENT
RIG 809

DWG No. R0809-D.001.LAY.09 | SHT 1 OF 1 | REV. 02

# PATTERSON-UTI
*Well Control*

**RIG:** 809



Made by Cameron
(Shaffer Spherical)
Clone Annular

**PATTERSON-UTI #** PS2-628
**STYLE:** New Shaffer Spherical
**BORE** 13 5/8" **PRESSURE** 5,000
**HEIGHT:** 48 ½" **WEIGHT:** 13,800 lbs

**PATTERSON-UTI #** PC2-128
**STYLE:** New Cameron Type U
**BORE** 13 5/8" **PRESSURE** 10,000
**RAMS: TOP** 5" Pipe **BTM** Blinds
**HEIGHT:** 66 5/8" **WEIGHT:** 24,000 lbs

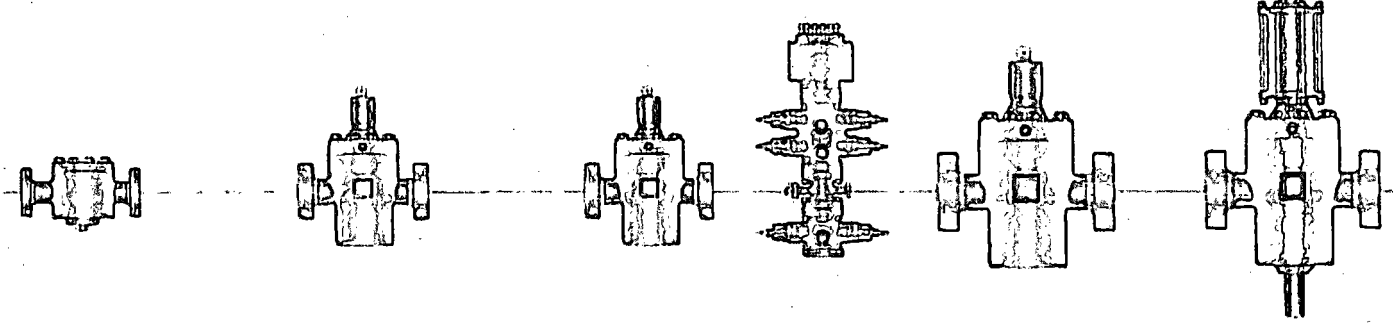
**Length** 40" **Outlets** 4" 10M
**DSA** 4" 10M x 2" 10M

**PATTERSON-UTI #** PC2-228
**STYLE:** New Cameron Type U
**BORE** 13 5/8" **PRESSURE** 10,000
**RAMS:** 5" Pipe
**HEIGHT:** 41 5/8" **WEIGHT:** 13,000 lbs

2" Minimum Kill Line

**WING VALVES**

3" Minimum Choke Line



2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve

R809

March 10, 2015

Midwest Hose & Specialty, Inc.

# Internal Hydrostatic Test Graph

**Customer:** Patterson B&E

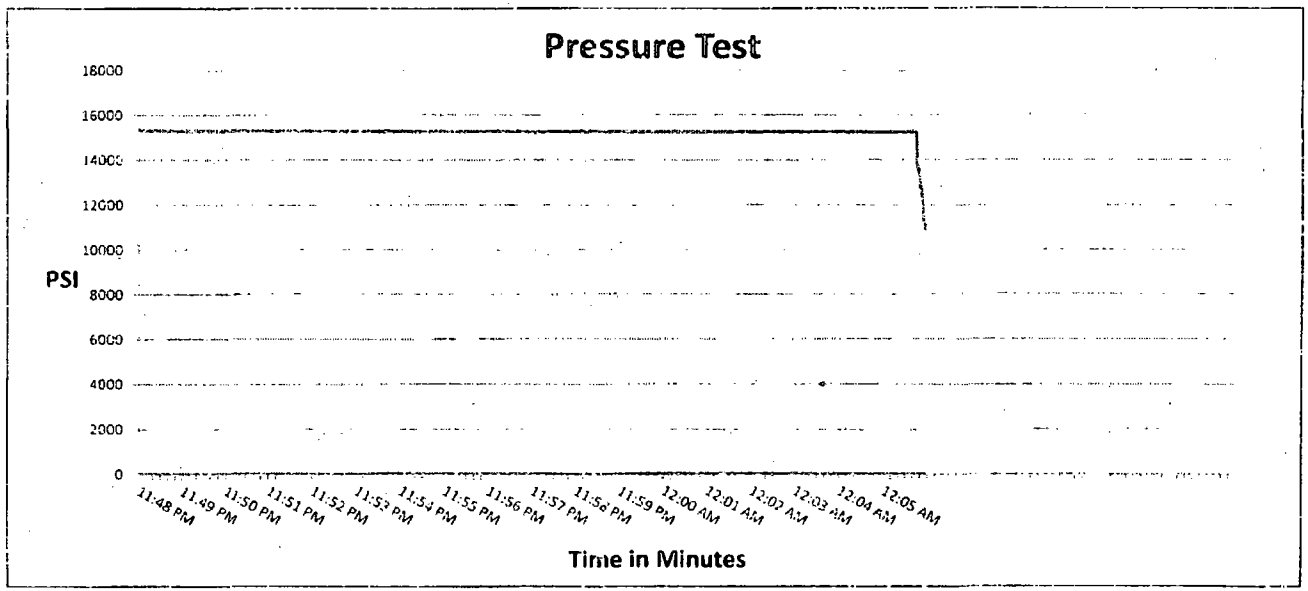
**Pick Ticket #:** 296283

## Hose Specifications

| Hose Type | Length |
|---|---|
| Mud | 50' |
| **I.D.** | **O.D.** |
| 2" | 3.47" |
| **Working Pressure** | **Burst Pressure** |
| 10000 PSI | Standard Safety Multiplier Applies |

## Verification

| Type of Fitting | Coupling Method |
|---|---|
| 2" 1502 | Swage |
| **Die Size** | **Final O.D.** |
| 97MM | 4.03" |
| **Hose Serial #** | **Hose Assembly Serial #** |
| 11839 | 296283 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 17 3/4 Minutes | | 15361 PSI |

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** *Richard Davis*

x

**Approved By:** *Ryan Adams*

x

Midwest Hose
& Specialty, Inc.

# *Internal Hydrostatic Test Certificate*

| General Information | | Hose Specifications | |
|---|---|---|---|
| *Customer* | **PATTERSON B&E** | *Hose Assembly Type* | **Choke & Kill** |
| *MWH Sales Representative* | **AMY WHITE** | *Certification* | **API 7K/FSL Level 2** |
| *Date Assembled* | **3/10/2015** | *Hose Grade* | **MUD** |
| *Location Assembled* | **OKC** | *Hose Working Pressure* | **10000** |
| *Sales Order #* | **245805** | *Hose Lot # and Date Code* | **11839-11/14** |
| *Customer Purchase Order #* | **270590** | *Hose I.D. (Inches)* | **2"** |
| *Assembly Serial # (Pick Ticket #)* | **296283** | *Hose O.D. (Inches)* | **3.99"** |
| *Hose Assembly Length* | **50'** | *Armor (yes/no)* | YES |

## Fittings

| End A | | End B | |
|---|---|---|---|
| *Stem (Part and Revision #)* | **R2.0X32M1502** | *Stem (Part and Revision #)* | **RF2.0 32F1502** |
| *Stem (Heat #)* | **14104546** | *Stem (Heat #)* | **A144853** |
| *Ferrule (Part and Revision #)* | **RF2.0 10K** | *Ferrule (Part and Revision #)* | **RF2.0 10K** |
| *Ferrule (Heat #)* | **41044** | *Ferrule (Heat #)* | **41044** |
| *Connection - Flange Hammer Union Part* | | *Connection (Part #)* | |
| *Connection (Heat #)* | | *Connection (Heat #)* | |
| *Nut (Part #)* | **2" 1502 H2S** | *Nut (Part #)* | |
| *Nut (Heat #)* | | *Nut (Heat #)* | |
| *Dies Used* | **97MM** | *Dies Used* | **97MM** |

## Hydrostatic Test Requirements

| | | |
|---|---|---|
| *Test Pressure (psi)* | **15,000** | ***Hose assembly was tested with ambient water temperature.*** |
| *Test Pressure Hold Time (minutes)* | **17 3/4** | |

| *Date Tested* | *Tested By* | *Approved By* |
|---|---|---|
| ***3/10/2015*** | | |

Midwest Hose
& Specialty, inc.

# Certificate of Conformity

| | |
|---|---|
| *Customer:* **PATTERSON B&E** | *Customer P.O.#* **270590** |
| *Sales Order #* **245805** | *Date Assembled:* **3/10/2015** |

## Specifications

| | | | |
|---|---|---|---|
| *Hose Assembly Type:* | **Choke & Kill** | | |
| *Assembly Serial #* | **296283** | *Hose Lot # and Date Code* | **11839-11/14** |
| *Hose Working Pressure (psi)* | **10000** | *Test Pressure (psi)* | **15000** |

*We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.*

*Supplier:*
***Midwest Hose & Specialty, Inc.***
***3312 S I-35 Service Rd***
***Oklahoma City, OK 73129***

*Comments:*

| ***Approved By*** | ***Date*** |
|---|---|
| | **3/19/2015** |

R 809 · Check & Kelly Hoses

# Internal Hydrostatic Test Graph

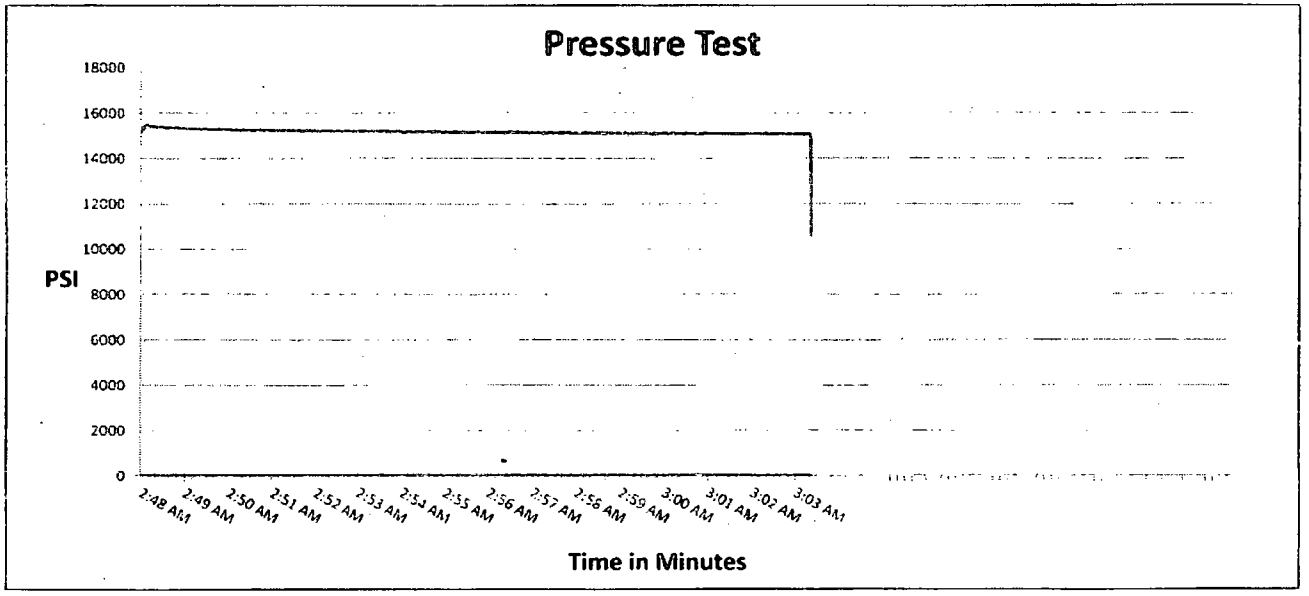
December 24, 2014

Midwest Hose & Specialty, Inc.

**Customer:** Patterson

**Pick Ticket #:** 286159

| Hose Specifications | | Verification | |
|---|---|---|---|
| **Hose Type** | **Length** | **Type of Fitting** | **Coupling Method** |
| Ck | 50' | 2" 1502 | Swage |
| **I.D.** | **O.D.** | **Die Size** | **Final O.D.** |
| 2" | 3.55" | 97MM | 3.98" |
| **Working Pressure** | **Burst Pressure** | **Hose Serial #** | **Hose Assembly Serial #** |
| 10000 PSI | Standard Safety Multiplier Applies | 11784 | 286159 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 15 1/4 Minutes | | 15410 PSI |

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** *Tyler Hill*

**Approved By:** *Ryan Adams*

Midwest Hose
& Specialty, Inc.

# *Internal Hydrostatic Test Certificate*

| General Information | | Hose Specifications | |
|---|---|---|---|
| *Customer* | **PATTERSON B&E** | *Hose Assembly Type* | **Choke & Kill** |
| *MWH Sales Representative* | **AMY WHITE** | *Certification* | **API 7K/FSL Level 2** |
| *Date Assembled* | **12/23/2014** | *Hose Grade* | **MUD** |
| *Location Assembled* | **OKC** | *Hose Working Pressure* | **10000** |
| *Sales Order #* | **237566** | *Hose Lot # and Date Code* | **11784-10/14** |
| *Customer Purchase Order #* | **261581** | *Hose I.D. (Inches)* | **2"** |
| *Assembly Serial # (Pick Ticket #)* | **286159** | *Hose O.D. (Inches)* | **4.00"** |
| *Hose Assembly Length* | **50'** | *Armor (yes/no)* | YES |

## Fittings

| End A | | End B | |
|---|---|---|---|
| *Stem (Part and Revision #)* | **R2.0X32M1502** | *Stem (Part and Revision #)* | **R2.0X32M1502** |
| *Stem (Heat #)* | **M14104546** | *Stem (Heat #)* | **M14101226** |
| *Ferrule (Part and Revision #)* | **RF2.0 10K** | *Ferrule (Part and Revision #)* | **RF2.0 10K** |
| *Ferrule (Heat #)* | **41044** | *Ferrule (Heat #)* | **41044** |
| *Connection . Flange Hammer Union Part* | **2"1502** | *Connection (Part #)* | |
| *Connection (Heat #)* | **2866** | *Connection (Heat #)* | |
| *Nut (Part #)* | | *Nut (Part #)* | |
| *Nut (Heat #)* | | *Nut (Heat #)* | |
| *Dies Used* | **97MM** | *Dies Used* | **97MM** |

## Hydrostatic Test Requirements

| | | |
|---|---|---|
| *Test Pressure (psi)* | **15,000** | ***Hose assembly was tested with ambient water temperature.*** |
| *Test Pressure Hold Time (minutes)* | **15 1/4** | |

| *Date Tested* | *Tested By* | *Approved By* |
|---|---|---|
| ***12/24/2014*** | | |

Midwest Hose
& Specialty, Inc.

# Certificate of Conformity

| | |
|---|---|
| *Customer:* **PATTERSON B&E** | *Customer P.O.#* **261581** |
| *Sales Order #* **237566** | *Date Assembled:* **12/23/2014** |

## Specifications

| | | | |
|---|---|---|---|
| *Hose Assembly Type:* | **Choke & Kill** | | |
| *Assembly Serial #* | **286159** | *Hose Lot # and Date Code* | **11784-10/14** |
| *Hose Working Pressure (psi)* | **10000** | *Test Pressure (psi)* | **15000** |

*We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.*

*Supplier:*
***Midwest Hose & Specialty, Inc.***
***3312 S I-35 Service Rd***
***Oklahoma City, OK 73129***

*Comments:*

| ***Approved By*** | ***Date*** |
|---|---|
| Ryan Adams | **12/29/2014** |

Midwest Hose
& Specialty, Inc.

# Internal Hydrostatic Test Certificate

| General Information | | Hose Specifications | |
|---|---|---|---|
| Customer | PATTERSON B&E | Hose Assembly Type | Choke & Kill |
| MWH Sales Representative | AMY WHITE | Certification | API 7K/FSL Level 2 |
| Date Assembled | 3/10/2015 | Hose Grade | MUD |
| Location Assembled | OKC | Hose Working Pressure | 10000 |
| Sales Order # | 245805 | Hose Lot # and Date Code | 11839-11/14 |
| Customer Purchase Order # | 270590 | Hose I.D. (Inches) | 2" |
| Assembly Serial # (Pick Ticket #) | 296283 | Hose O.D. (Inches) | 3.99" |
| Hose Assembly Length | 50' | Armor (yes/no) | YES |

| Fittings | | | |
|---|---|---|---|
| End A | | End B | |
| Stem (Part and Revision #) | R2.0X32M1502 | Stem (Part and Revision #) | RF2.0 32F1502 |
| Stem (Heat #) | 14104546 | Stem (Heat #) | A144853 |
| Ferrule (Part and Revision #) | RF2.0 10K | Ferrule (Part and Revision #) | RF2.0 10K |
| Ferrule (Heat #) | 41044 | Ferrule (Heat #) | 41044 |
| Connection . Flange Hammer Union Part | | Connection (Part #) | |
| Connection (Heat #) | | Connection (Heat #) | |
| Nut (Part #) | 2" 1502 H2S | Nut (Part #) | |
| Nut (Heat #) | | Nut (Heat #) | |
| Dies Used | 97MM | Dies Used | 97MM |

| Hydrostatic Test Requirements | | |
|---|---|---|
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. |
| Test Pressure Hold Time (minutes) | 17 3/4 | |

| Date Tested | Tested By | Approved By |
|---|---|---|
| 3/10/2015 | | |

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

## Casing Design Criteria and Load Case Assumptions

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

## Casing Design Criteria and Load Case Assumptions

### Production Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

**Matador Production Company** **DRILL PLAN PAGE 1**
**Verna Rae Fed Com 123H**
**SHL 230' FNL & 1815' FEL**
**BHL 240' FSL & 1980' FEL**
**Sec. 6, T. 20 S., R. 34 E., Lea County, NM**

Drilling Program

1. ESTIMATED TOPS

| Formation Name | TVD | MD | Bearing |
|---|---|---|---|
| Quaternary | 000' | 000' | water |
| Rustler anhydrite | 1475' | 1476' | N/A |
| Top salt | 1605' | 1606' | N/A |
| Base salt | 3160' | 3168' | N/A |
| Tansill sandstone | 3195' | 3203' | N/A |
| Yates gypsum | 3302' | 3310' | N/A |
| Seven Rivers dolomite | 3695' | 3703' | N/A |
| Queen sandstone | 4602' | 4610' | N/A |
| Capitan/Goat Seep Reef carbonate | 4750' | 4758' | water |
| Delaware Mt. Group sandstones | 5295' | 5303' | hydrocarbons |
| Brushy Canyon sandstone | 6194' | 6202' | hydrocarbons |
| Bone Spring Limestone | 8279' | 8287' | hydrocarbons |
| 1st Bone Spring carbonate | 9010' | 9018' | hydrocarbons |
| 1st Bone Spring sand | 9400' | 9408' | hydrocarbons |
| 2nd Bone Spring carbonate | 9695' | 9703' | hydrocarbons |
| (KOP | 9762' | 9769' | hydrocarbons) |
| 2nd Bone Spring sand | 9930' | 9980' | hydrocarbons & goal |
| TD | 10335' | 14982' | hydrocarbons |

2. NOTABLE ZONES

Second Bone Spring sand is the goal. Hole will extend south of the last perforation point to allow for pump installation. All perforations will be ≥330' from the dedication perimeter. Closest water well (L 07213) is 1863' NNE. Depth to water is 110' in this 160' deep inactive well.

3. PRESSURE CONTROL

A 10,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attached BOP, choke manifold, co-flex hose, and speed head diagrams.

An accumulator complying with Onshore Order 2 requirements for the BOP stack pressure rating will be present. Rotating head will be installed as needed.

Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required in Onshore Order 2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third party company will test the BOPs.

Surface casing will be pressure tested to 250 psi low and 2000 psi high. Intermediate casing pressure tests will be made to 250 psi low and 3000 psi high. Annular preventer will be tested to 250 psi low and 2500 psi high on the surface casing and tested to 250 psi low and 2500 psi high on the intermediate casing. In the case of running a speed head with landing mandrel for 9.625" casing, initial surface casing test pressures will be 250 psi low and 3000 psi high, with wellhead seals tested to 5000 psi once the 9.625" casing has been landed and cemented. Matador is requesting a variance to use a speed head. Speed head diameter range is 13.375" x 9.625" x 5.5" x 2.875".

Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. Manufacturer does not require the hose to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

## 4. CASING & CEMENT

All casing will be API and new. See attached casing assumption worksheet.

| Hole O. D. | Set MD | Set TVD | Casing O. D. | Weight (lb/ft) | Grade | Joint | Collapse | Burst | Tension |
|---|---|---|---|---|---|---|---|---|---|
| 20" | 0' - 1600' | 0' - 1600' | Surface 13.375" | 54.5 | J-55 | BTC | 1.125 | 1.125 | 1.8 |
| 12.25" | 0' - 5400' | 0' - 5392' | Inter. 9.625" | 40 | J-55 | BTC | 1.125 | 1.125 | 1.8 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8.75" | 0' - 14982' | 0' – 10335' | Product. 5.5" | 20 | P-110 | DWC/C | 1.125 | 1.125 | 1.8 |

| Casing Name | Type | Sacks | Yield | Cu. Ft. | Weight | Blend |
|---|---|---|---|---|---|---|
| Surface | Lead | 1764 | 1.75 | 3087 | 13.5 | Class C + 3% NaCl + LCM |
| | Tail | 559 | 1.38 | 771 | 14.8 | Class C + 5% NaCl + LCM |
| TOC = GL | | 100% Excess | | | Centralizers per Onshore Order 2 | |
| Intermediate | Lead | 1262 | 1.81 | 2284 | 13.5 | Class C + Bentonite + 1% $CaCl_2$ + 8% NaCl + LCM |
| | Tail | 490 | 1.38 | 676 | 14.8 | Class C + 5% NaCl + LCM |
| TOC = GL | | 100% Excess | | | 2 on btm jt, 1 on 2nd jt, 1 every 4th jt to GL | |
| Production | Lead | 616 | 2.25 | 1386 | 11.5 | TXI + Fluid Loss + Dispersant + Retarder + LCM |
| | Tail | 1540 | 1.38 | 2125 | 13.2 | TXI + Fluid Loss + Dispersant + Retarder + LCM |
| TOC = 4400' | | 35% Excess | | | 2 on btm jt, 1 on 2nd jt, 1 every other jt to top of tail cement (1000' above TOC) | |

Matador requests the option to run a DV tool with annular packer as contingency in the intermediate section if lost circulation is encountered. If losses occur, then the DV tool with packer will be placed ≥100' above the loss zone to give the option to pump cement as either a single stage or two stage.

5. MUD PROGRAM

An electronic Pason mud monitoring system complying with Onshore Order 1 will be used. All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. A closed loop system will be used.

| Type | Interval (MD) | lb/gal | Viscosity | Fluid Loss |
|---|---|---|---|---|
| fresh water spud | 0' - 1600' | 8.4 | 28 | NC |
| brine water | 1600' - 5400' | 10.0 | 30-32 | NC |
| fresh water & cut brine | 5400' - 14982' | 9.0 | 30-32 | NC |

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud logging program will be used from ≈1600' to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to TOC.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈5115 psi. Expected bottom hole temperature is ≈145° F.

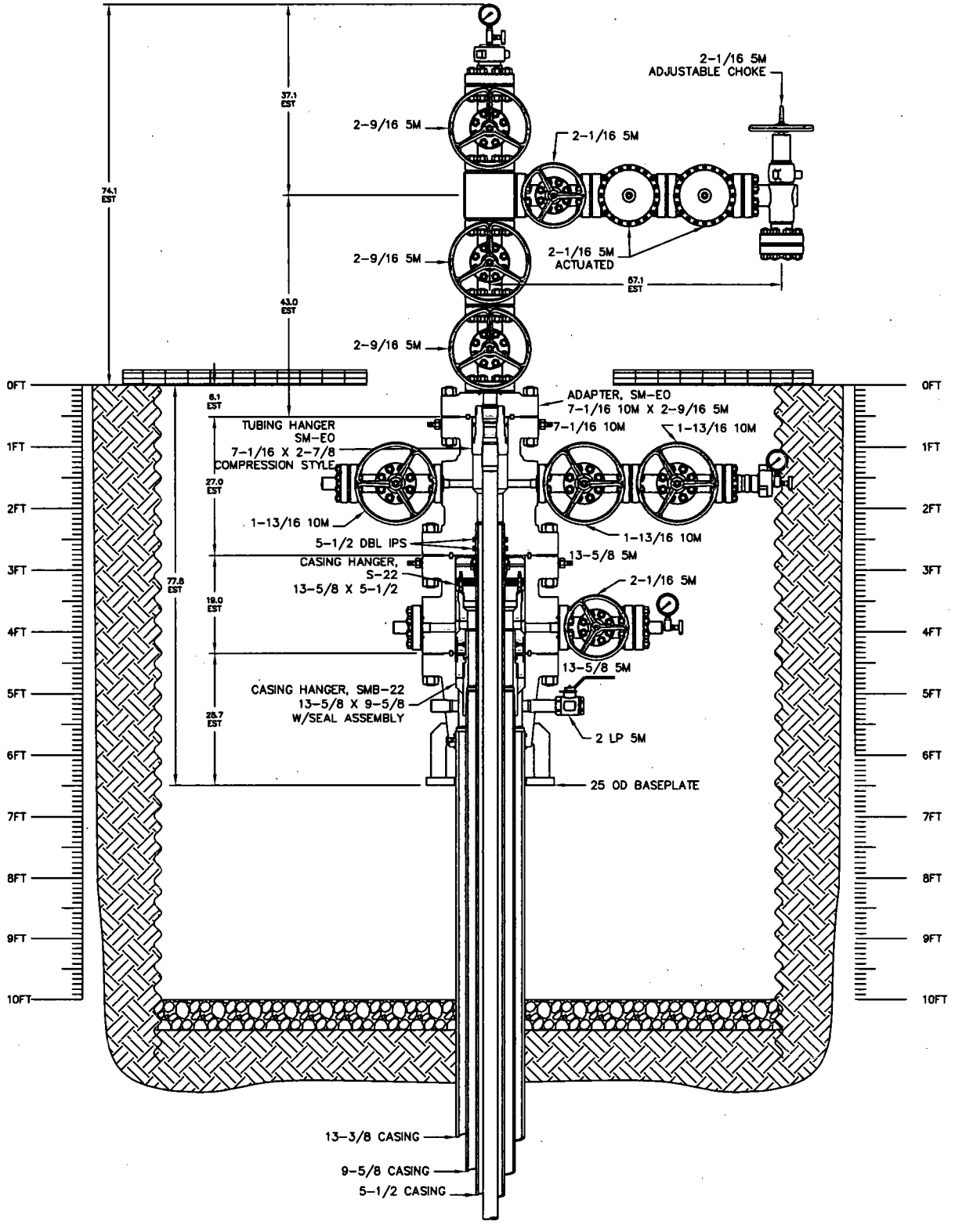
In accordance with Onshore Order 6, Matador does not anticipate that there will be enough $H_2S$ from the surface to the Bone Spring to meet the BLM's minimum requirements for the submission of an "$H_2S$ Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Since Matador has an $H_2S$ safety package on all wells, an "$H_2S$ Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3 months to drill and complete the well.

Matador Production Company owns the majority working interest in this well. Per its discussions with its potential partners, Matador will be named operator upon execution of the final Operating Agreements signed by the partners or the issuance of a pooling order by the State.

MATADOR
MQ-436




NOTE:
DIMENSIONS SHOWN ON THIS DRAWING ARE ESTIMATES ONLY AND CAN VARY SIGNIFICANTLY DEPENDING ON RAW MATERIAL LENGTHS. NO GUARANTEE OF STACKUP HEIGHT IS IMPLIED. DIMENSIONS SHOWN SHOULD BE CONSIDERED FOR REFERENCE PURPOSES ONLY.



WEIR

5,000 PSI WELLHEAD & TREE ASSEMBLY
13-3/8 X 9-5/8 X 5-1/2 X 2-7/8

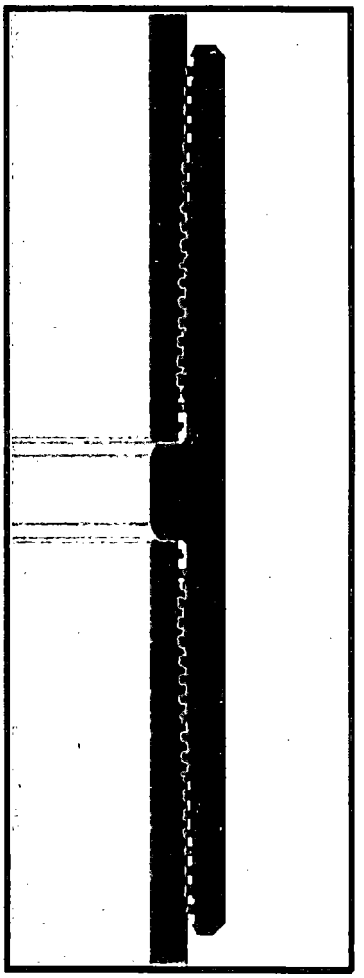
| DRAWN BY: RPL | SCALE 1:10 | DATE 23SEP16 | REV |
|---|---|---|---|
| CHECKED BY: | DRAWING NO. P-21629 | | |
| APPROVED BY: | | | |

# Technical Specifications

| Connection Type: | Size(O.D.): | Weight (Wall): | Grade: |
|---|---|---|---|
| DWC/C-IS PLUS Casing | 5-1/2 in | 20.00 lb/ft (0.361 in) | VST P110 EC |
| standard | | | |

| | |
|---|---|
| | **Material** |
| VST P110 EC | Grade |
| 125,000 | Minimum Yield Strength (psi) |
| 135,000 | Minimum Ultimate Strength (psi) |
| | **Pipe Dimensions** |
| 5.500 | Nominal Pipe Body O.D. (in) |
| 4.778 | Nominal Pipe Body I.D.(in) |
| 0.361 | Nominal Wall Thickness (in) |
| 20.00 | Nominal Weight (lbs/ft) |
| 19.83 | Plain End Weight (lbs/ft) |
| 5.828 | Nominal Pipe Body Area (sq in) |
| | **Pipe Body Performance Properties** |
| 729,000 | Minimum Pipe Body Yield Strength (lbs) |
| 12,090 | Minimum Collapse Pressure (psi) |
| 14,360 | Minimum Internal Yield Pressure (psi) |
| 13,100 | Hydrostatic Test Pressure (psi) |
| | **Connection Dimensions** |
| 6.300 | Connection O.D. (in) |
| 4.778 | Connection I.D. (in) |
| 4.653 | Connection Drift Diameter (in) |
| 4.13 | Make-up Loss (in) |
| 5.828 | Critical Area (sq in) |
| 100.0 | Joint Efficiency (%) |
| | **Connection Performance Properties** |
| 729,000 | Joint Strength (lbs) |
| 26,040 | Reference String Length (ft) 1.4 Design Factor |
| 728,000 | API Joint Strength (lbs) |
| 729,000 | Compression Rating (lbs) |
| 12,090 | API Collapse Pressure Rating (psi) |
| 14,360 | API Internal Pressure Resistance (psi) |
| 104.2 | Maximum Uniaxial Bend Rating [degrees/100 ft] |
| | **Appoximated Field End Torque Values** |
| 16,600 | Minimum Final Torque (ft-lbs) |
| 19,100 | Maximum Final Torque (ft-lbs) |
| 21,600 | Connection Yield Torque (ft-lbs) |

VAM USA
4424 W. Sam Houston Pkwy. Suite 150
Houston, TX 77041
Phone: 713-479-3200
Fax: 713-479-3234
E-mail: VAMUSAsales@vam-usa.com



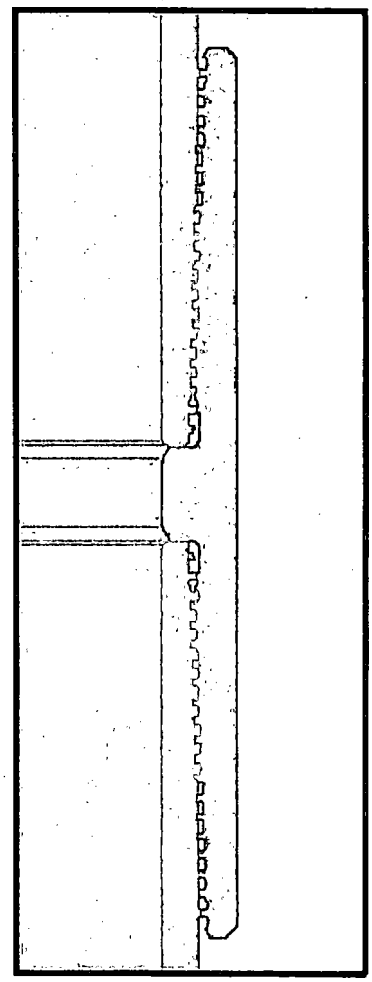
**For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).**



4/14/2015

**DWC Connection Data Notes:**

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.





4/14/2015

Matador requests the option to run a DV tool with annular packer as contingency in the intermediate 1 section on 9-5/8" casing if lost circulation is encountered. If losses occur the DV tool with packer will be placed at least 100' above loss zone to give the option to pump cement as either a single stage or two stage.

**Matador DV Tool Specifications**

Example:

Assuming DV tool set at 4500' MD but if the setting depth changes, cement volumes will be adjusted proportionately.

Stage 1:

| | | | | |
|---|---|---|---|---|
| Lead | 1262 | 1.81 | 13.5 | Class C + Bentonite + 1% CaCL2 + 8% NaCl + LCM |
| Tail | 490 | 1.38 | 14.8 | Class C + 5% NaCl + LCM |
| 100% excess, TOC = 0' MD | | | | |

Stage 2:

| | | | | |
|---|---|---|---|---|
| Lead | 1324 | 1.81 | 13.5 | Class C + Bentonite + 1% CaCL2 + 8% NaCl + LCM |
| 100% excess, TOC = 0' MD | | | | |

**APD ID:** 10400015062 **Submission Date:** 06/16/2017

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

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

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

VernaRae_123H_Road_Map_06-13-2017.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

### ROW ID(s)

**ID:**

**Do the existing roads need to be improved?** NO

**Existing Road Improvement Description:**

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

VernaRae_123H_Road_Map_06-13-2017.pdf

**New road type:** RESOURCE

**Length:** 629.25 Feet **Width (ft.):** 30

**Max slope (%):** 0 **Max grade (%):** 3

**Army Corp of Engineers (ACOE) permit required?** NO

**ACOE Permit Number(s):**

**New road travel width:** 14

**New road access erosion control:** Crown & ditch, surface with caliche

**New road access plan or profile prepared?** NO

**New road access plan attachment:**

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** grader

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:** **Access turnout map:**

## Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** No drainage crossings needed.

**Road Drainage Control Structures (DCS) description:** Crown & ditch, no culverts needed.

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

**Additional Attachment(s):**

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

VernaRae_123H_Well_Map_06-13-2017.pdf

**Existing Wells description:**

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:**

**Production Facilities map:**

VernaRae_123H_Production_Diagram_06-13-2017.pdf

## Section 5 - Location and Types of Water Supply

## Water Source Table

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Water source use type:** DUST CONTROL, STIMULATION **Water source type:** GW WELL

**Describe type:**

**Source latitude:** **Source longitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** PRIVATE

**Water source transport method:** TRUCKING

**Source transportation land ownership:** PRIVATE

**Water source volume (barrels):** 15000 **Source volume (acre-feet):** 1.9333965

**Source volume (gal):** 630000

**Water source and transportation map:**

VernaRae_123H_Water_Source_Map_06-13-2017.pdf

**Water source comments:**

**New water well?** NO

## New Water Well Info

**Well latitude:** **Well Longitude:** **Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):** **Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):** **Well casing type:**

**Well casing outside diameter (in.):** **Well casing inside diameter (in.):**

**New water well casing?** **Used casing source:**

**Drilling method:** **Drill material:**

**Grout material:** **Grout depth:**

**Casing length (ft.):** **Casing top depth (ft.):**

**Well Production type:** **Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

## Section 6 - Construction Materials

**Construction Materials description:** NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled north of the pad. V-door will face south. Closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private land. Klein pit is in SWNW 27-19S-35E. Berry pit is in E2NE4 35-20s-34e.
**Construction Materials source location attachment:**

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** cuttings and mud

**Amount of waste:** 15000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** steel tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
**Disposal type description:**

**Disposal location description:** Halfway, NM

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** NO

**Description of cuttings location**

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Cuttings area depth (ft.)** **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

VernaRae_123H_Well_Site_Layout_06-13-2017.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** VERNA RAE

**Multiple Well Pad Number:** SLOT 3

**Recontouring attachment:**

VernaRae_123H_Recontour_Plat_06-13-2017.PDF

VernaRae_123H_Interim_Reclaimation_Diagram_20170928091415.PDF

**Drainage/Erosion control construction:** Surface with caliche

**Drainage/Erosion control reclamation:** Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.

**Wellpad long term disturbance (acres):** 3.15

**Wellpad short term disturbance (acres):** 3.57

**Access road long term disturbance (acres):** 0.43

**Access road short term disturbance (acres):** 0.43

**Pipeline long term disturbance (acres):** 0

**Pipeline short term disturbance (acres):** 0

**Other long term disturbance (acres):** 0

**Other short term disturbance (acres):** 0.49

**Total long term disturbance:** 3.58

**Total short term disturbance:** 4.49

**Reconstruction method:** Within 7 days disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour with a grader. Disturbed areas will be seeded in accordance with the surface owner's requirements.

**Topsoil redistribution:** Soil will be evenly spread over disturbed areas

**Soil treatment:** No soil treatment planned, site will be revegetated in accordance with the surface owner's requirements.

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Existing Vegetation at the well pad:**

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:**

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:**

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:**

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?**

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?**

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?**

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

### Seed Summary

**Total pounds/Acre:**

| Seed Type | Pounds/Acre |
|---|---|

**Seed reclamation attachment:**

## Operator Contact/Responsible Official Contact Info

**First Name:** **Last Name:**

**Phone:** **Email:**

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** Noxious weeds will be controlled.

**Weed treatment plan attachment:**

**Monitoring plan description:** On pumper visits.

**Monitoring plan attachment:**

**Success standards:** To landowner's specifications.

**Pit closure description:** N/A (closed loop)

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Fee Owner:** Larry Hughes **Fee Owner Address:** HC 69 Box 57 Monument NM 88265

**Phone:** (575)263-7602 **Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Matador Resources Company has a private surface owner agreement with Larry Hughes (HC 69 Box 57, Monument NM 88265) for the Verna Rae Fed Com road in SESE Sec. 31, T. 19 S., R. 34 E. and the Verna Rae Fed Com slot 3 well site, road, and power line in Section 6, T. 20 S., R. 34 E., Lea County, NM. Matador Resources Company will file an Application for Right-Of-Way Easement with the NM State Land Office (PO Box 1148, Santa Fe NM 87504) for road access across S2S2 32-19s-34e. Their phone number is (505) 827-5728.

**Surface Access Bond BLM or Forest Service:** BLM

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

## Section 12 - Other Information

**Right of Way needed?** NO **Use APD as ROW?**

**ROW Type(s):**

### ROW Applications

**SUPO Additional Information:** Deficiency Letter dated 9/19/17 requested: 1) Reclamation Diagram - see attachment in Reclamation section; 2) Surface Use Agreement - see attachment in Other SUPO attachments section

**Use a previously conducted onsite?** YES

**Previous Onsite information:** On site inspection was held with Vance Wolf, Cassie Brooks, and Bob Ballard (all BLM) on April 3, 2017.

### Other SUPO Attachment

VernaRae_123H_General_SUPO_06-13-2017.pdf

VernaRae_123H_Surface_Use_Agreement_20170928092843.pdf

## 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:**

**Decribe 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:**

**Decribe 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:

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

# Bond Info Data Report

01/02/2018

## Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001079

**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:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** VERNA RAE FEDERAL COM **Well Number:** 123H

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PPP Leg #1 | 2640 | FNL | 1980 | FEL | 20S | 34E | 6 | Aliquot SWNE | 32.60214 | -103.59737 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 40406 | -6715 | 12584 | 10335 |
| EXIT Leg #1 | 240 | FSL | 1980 | FEL | 20S | 34E | 6 | Aliquot SWSE | 32.5955565 | -103.597427 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 40406 | -6715 | 14982 | 10335 |
| BHL Leg #1 | 240 | FSL | 1980 | FEL | 20S | 34E | 6 | Aliquot SWSE | 32.5955565 | -103.597427 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 40406 | -6715 | 14982 | 10335 |

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

# Operator Certification Data Report

01/02/2018

## 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:** Brian Wood **Signed on:** 06/16/2017

**Title:** President

**Street Address:** 37 Verano Loop

**City:** Santa Fe **State:** NM **Zip:** 87508

**Phone:** (505)466-8120

**Email address:** afmss@permitswest.com

## Field Representative

**Representative Name:**

**Street Address:**

**City:** **State:** **Zip:**

**Phone:**

**Email address:**